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Special Education Teachers' Perceptions of Substance Abuse Issues and Related Classroom Pedagogy: A National Survey

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Special Education Teachers' Perceptions of Substance Abuse Issues and Related Classroom Pedagogy: A National Survey

by

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Dedication

Thus far you have brought me Oh Lord. May you be glorified!

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Special Education Teachers' Perceptions of Substance Abuse Issues and Related Classroom Pedagogy: A National Survey

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This study employed a survey design. 5,000 special education teachers were sampled across the nation to determine their perceptions of knowledge of substance abuse, and instructional and behavioral management skills to address students with disabilities who are abusing substances. The following research questions were addressed: (a) What are special education teachers' perceptions of substance abuse intake among their students; (b) What are special education teachers' perceptions of their knowledge of different substance abuse areas; (c) What are special education teachers' perceptions of their classroom knowledge in addressing instructional and behavioral management issues of special education students abusing substances; (d) Are there differences in the teachers' perceptions of their substance abuse knowledge and related classroom pedagogy skills across: (i) school levels kindergarten/elementary, middle, high school), (ii) school locations (rural, urban,

suburban), and (iii) teacher disability assignment (as determined by their students' primary disability).

Descriptive statistics, one-way analysis of variance (ANOVA) repeated measures, and multivariate analysis of variance (MANOVA) was used to analyze the data. The results revealed that although special educators perceive their students abuse substances, they think it is only by a small percentage of students. Significant differences were noted in the teachers' perception of knowledge in the six substance abuse areas assessed. Significant differences of the teachers' perceptions of knowledge were also noted across school locations and teacher disability assignments. Future studies should focus on conducting more extensive research in this limited area of study.

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CHAPTER 1

INTRODUCTION

Substance abuse practice is endemic among youth (DiGiovanni, 2006). For example, according to the 2001 National Household Survey on Drug Abuse [NHSDA], almost five million youths aged 12 to 17 (21%) had used an illicit drug in the past year. Over eight million youths (34%) had used alcohol at least once in the past year (Office of Applied Studies, 2003). Research studies have also reported cases of substance abuse among youth as young as nine years old (Partnership for a Drug Free America, 1998; Wendehack & Green, 2001). The substances of choice range from alcohol, hard drugs (e.g., heroin, cocaine) and club drugs (e.g., ecstasy, LSD), to prescription-type and over-the-counter drugs (Johnston, O'Malley, & Bachman, 2002; Johnston, O'Malley, Bachman, & Schulenberg, 2007). According to Erickson (2007) substance use among adolescents often meets the criteria of abuse, and in some cases addiction.

Substance Use Among Students with Disabilities

Recent studies indicate that youth with disabilities, who represent roughly 13% of the nation's school-age population (National Center for Education Statistics [NCES], 2001) have alcohol and other drug use that are comparable to, if not higher than, those of their peers (Demers, 2000; McMillen, McMillen, & Simeonsson, 2002; Simeonsson, McMillen, McMillen, & Lollar, 2002; Substance Abuse and Mental Health Services Administration [SAMHSA], 1998; Westermeyer, Kemp, & Nugent, 1996). For instance, Johnston et al. (2002) found that tobacco and binge alcohol use were significantly higher for adolescents with disabilities than adolescents without disabilities, while general

alcohol use rates were comparable between the two groups. Similarly, in the 2001 North Carolina middle school Youth Risk Behavior Survey, Simeonson et al. (2002) reported significantly higher use of alcohol and marijuana among students with disabilities, prior to the age of eleven years, than their peers without disabilities. Students with disabilities also reported higher use of alcohol and cigarette use within the past thirty days, and higher lifetime use of glue and steroids. In addition, the study revealed that middle schoolers had had more exposure to a drug dealer than their non-disabled peers.

Risk Factors for Substance Abuse among Students with Disabilities

Students with disabilities experience a substantially higher substance abuse risk than their nondisabled peers (McCombs, 2002; Stevens & Smith, 2005). This is primarily because of the additional risk factors they face for substance abuse, beyond those faced by adolescents in general such as peer pressure, need to experiment, media enticements, stress, dysfunctional family, among others (Center for Substance Abuse Prevention [CSAP], 1998; Fisher & Harrison, 2005; Kilpatrick, Acierno, Saunders, Resnick, Best, & Schnurr, 2000). Additional specific risk factors for students with disabilities include low self-esteem, unsuccessful school experiences, stigmatization, prescribed medications that may be addictive, chronic medical problems, social isolation, lack of socialization skills, co-existing behavioral problems, comorbid disability, disenfranchisement, and mental health issues (Christian, & Poling, 1997; Hallowell & Ratey, 1995; Helwig & Holicky, 1994; Kessler & Klein, 1995; Maag, Irvin, Reid, & Vaca, 1994; McCombs, 2002; Stevens & Smith, 2005).

Additionally, the cognitive, psychological, and social skills limitations due to the disability, compound and further place these students into higher risk for substance abuse practices if they live in a household with a family member with an alcohol or other drug problem, have witnessed or experienced physical abuse, sexual abuse, and/or emotional abuse (Borowsky & Resnick, 1998; Helwig & Holicky, 1994; Stevens & Smith, 2005).

Effects of Substance Abuse on Students with Disabilities

In general, significant impairments have been associated with substance abuse among adolescents (Steinberg, 2007). These include poor academic functioning (e.g., Chatlos, 1997; Lynskey & Hall, 2000; Steinberg, 2007), family dysfunction (e.g., Dakof, 2000), and health problems (Brown & Tapert, 2004) among others. In addition, substance abuse during adolescence predict adversity in adulthood such as limited employment opportunities, unstable work patterns, poor relationships, higher divorce rates, delinquent and criminal behaviors, as well as physical and psychological disturbances (Aarons, Brown, Hough, Garland, & Wood, 2001).

Students with disabilities who abuse substances are similarly impacted (Hollar & Moore, 2004; Quinn & Poirier, 2004). For instance, studies indicate that cigarette smoking, binge drinking, and marijuana use negatively affect the immediate and long-term educational and life success of adolescents with disabilities, besides their non-disabled peers (Hollar & Moore, 2004; McMillen et al., 2002; Simeonson et al., 2002). However, for students with disabilities, the associated negative academic, legal, social, and medical consequences are largely experienced sooner than their peers without disabilities (Morgan, Genaux, & Likins, 1994; Quinn & Poirier, 2004).

In-school Substance Abuse Services for Students with Disabilities

The No Child Left Behind (NCLB) law recognizes the negative impact substance use/abuse may have on students' educational outcomes (NCLB, 2002). In an effort to mitigate these adverse effects, federal funds are provided to states, under Title IV, to promote school safety and youth drug prevention (NCLB, 2002). Such drug prevention efforts, among others, include: (a) reducing or delaying the uptake of substance use among students, and (b) minimizing the negative impact of substance-use and substance-related activities on students (NCLB, 2002). Despite federal assistance, substance abuse and other mental health services are limited in schools (DiGiovanni, 2006).

Furthermore, research indicates that even when schools do provide these risk-reduction programs, many students in special education are excluded (Demers, French, & Moore, 2002; Foster, Rollefson, Doksum, Noonan, Robinson, & Teich, 2005; Morgan, Hibell, Anderson, Bjarnason, Kokkevi, & Narusk, 1999; Snow, Wallace, & Munro, 2001). One of the reasons is due to lack of a strategic plan for identifying these students (Quinn & Poirier, 2004). The few available prevention programs are also not tailored to the disability-specific risk factors for substance abuse for students with disabilities (Demers, 2000; Morgan et al., 1994; SAMHSA, 1998; Snow et al., 2001). Consequently, these limited services are of little help, if any, to these students.

Additionally, school personnel who may be in a position to assist students with disabilities are not adequately trained in the area of substance abuse and special education, and in most cases, focus on other related special education activities (Baker, 2000). For example, research indicates that many school counselors do not receive

specific preparation in the area of substance abuse in their graduate programs (Milsom, 2002; Steven & Smith, 2005), or much coursework preparation to work with students with disabilities (Deck, Scarborough, Sferrazza, & Estill, 1999; Wood, Natalie, & Baker, 2002). In the field of counselor education, substance abuse courses are offered as electives, and few programs provide coursework in the specific area of substance abuse (Fong, Leahy, Saunders, Tarvydas, Ferrin, & Lee, 2003; Lenhardt, 1994).

The training of school psychologists is similarly limited. Although research has indicated that school psychologists have the training to provide a leadership role in comprehensive mental health services in the schools, they continue to spend the majority of their time in assessment, in special education-related activities, and in fulfilling federal and state testing requirements (Jones, 2007). The lack of substance abuse training by these school personnel, especially in relation to students with disabilities, and the fact that priority is focused more on other special education activities, places this particular student population at greater risk for continued problems that can hinder the attainment of educational success.

NCLB Law and Students with Disabilities

The No Child Left Behind law emphasizes high levels of academic achievement for all students, including students with disabilities (NCLB, 2002). However, for students with disabilities abusing substances, meeting these expectations becomes even more out of reach. This is because substance abuse negatively impacts both cognition and behavior (Erickson, 2007), which for such students, adversely affects their classroom conduct, learning behavior, and consequently their academic performance (Quinn & Poirier,

2004).

Historically, the Individuals with Disabilities Act (IDEA) has fostered the development and delivery of individualized special education services to aid students with disabilities to achieve academic goals (IDEA, 1997). Also, the 2001 No Child Left Behind Law further emphasizes that students with disabilities are entitled to services that will enable them to benefit from their educational experience, and to receive a quality education through equal access (NCLB, 2002). However, for the most part, in-school substance abuse services are inaccessible and inadequate for students with disabilities abusing substances (Demers et al., 2002; Morgan et al., 1999; SAMHSA, 1998).

Statement of the Problem

Students with disabilities are not only using substances that are comparable to their peers without disabilities (Demers, 2000; SAMHSA, 1998), but are also, in some cases, using substances significantly higher than their non-disabled peers (Johnston et al., 2002; Simeonson et al., 2002). The latter implies a high likelihood of substance abuse among this student population. More unsettling is that the deviant practice among this population may start prior to age eleven (Simeonson et al., 2002), particularly bearing in mind the additional risk factors that make this student population more vulnerable to abuse substances than their non-disabled peers (Helwig & Holicky, 1994; Kessler & Klein, 1995; McCombs, 2002). Although this student population experiences similar immediate and long-term adverse educational and life outcomes due to substance abuse (Hollar & Moore, 2004; McMillen et al., 2002; Simeonson et al., 2002; Quinn & Poirier,

2004), the effects are largely experienced sooner for these students compared to their non-disabled peers (Morgan et al., 1994).

While federal funds are available to schools to mitigate the adverse effects of students' educational performance due to substance abuse, such services tend to not only be limited (DiGiovanni, 2006), but are often inaccessible for students with disabilities (Demers et al., 2002; Foster et al., 2005; Morgan et al., 1999). Moreover, school counselors and school psychologists who may be in a position to help possess limited knowledge with regards to substance abuse and students with disabilities (Baker, 2000; Jones, 2007). Consequently, students with disabilities needing assistance with their substance abuse problem may not only receive minimal help, but the dismal condition continues to impede their academic performance, as well as their hope for life success.

In the prevailing circumstances, special educators are faced with the burden of intervening with these students to help minimize detrimental effects in their academic performance caused by their substance abuse problem. For this to effectively happen, it means special educators need to be knowledgeable in substance abuse related areas. Having this information is especially critical because: (a) in this day and age, many youth with disabilities indulge in substance abuse (Demers, 2000; McMillen et al., 2002); (b) substance abuse negatively impacts the academic performance of these students (Quinn & Poirier, 2004); (c) under the NCLB law special education students who are abusing substances are held to the same academic standards as students without disabilities; (d) special education teachers serve as a key resource for students with disabilities, and would benefit students if they were able to identify and provide referrals for those in need

(Quinn & Poirier, 2004); (e) the teachers must be prepared to work with these students proactively to prevent exasperation of the problem (Watson & Westby, 2003); and (f) special educators need the basic skills to effectively work with these students instructionally and manage any behavioral issues that may arise before, during, and after treatment (NCLB, 2002).

Significance of the Study

Although special education teachers may need to intervene in students with disabilities who are abusing substances, we have inadequate knowledge about teachers' perceptions of their knowledge of substance abuse and of their confidence to address these problems. The literature has primarily focused on the teachers' perceptions of the quality of in-school substance abuse and mental health programs for their students (e.g., Fowler & Tisdale, 1992). Also, while research has examined the teachers' perceptions of substance abuse knowledge and their instructional practices on the topic (e.g., Genaux, Morgan, & Friedman, 1995) this research is more than a decade old. Further, no studies have examined the teachers' perceptions of pedagogical skills related to addressing instructional and behavior management problems among students with disabilities abusing substances. Thus, a study examining special education teachers' perceptions of knowledge in substance abuse and related pedagogical skills to address students with disabilities experiencing a substance abuse problem is timely and warranted.

Understanding teacher perceptions is advantageous to researchers and teacher educators for several reasons (Darling-Hammond & Bransford, 2005; Parajes, 1992). First, assessing teachers' perceptions will offer an understanding of their knowledge

about substance abuse and related classroom pedagogical skills for intervening with students with disabilities who are abusing substances. Second, we will have further information about their perceptions of areas of need related to the types of substances abused, their effects, and essential pedagogical skills to address students with disabilities abusing substances.

Given this knowledge, researchers and teacher educators can embark on addressing the multiple issues involved in the research-to-practice gap, by providing the knowledge base in this area, and creating feasible interventions for special education teachers to implement with this particular student population. Additionally, teacher educators can reexamine the preparation programs to determine effective teacher education and professional development practices that inform special education teachers of related best practices with this student population. Such efforts will have beneficial effects in special education settings. First, special education teachers will be in a better position to identify their students with a substance abuse problem, and provide timely referrals. Second, these teachers will be more prepared to address instructional and behavioral problems occurring with these students in the classroom.

Definition of Terms

For the purpose of this study, the following definitions apply:

Substance abuse- incorporates the use/abuse of alcohol, the taking of illegal drugs, and the abuse of prescription drugs and/or over-the counter drugs.

Classroom pedagogy- refers to the instructional strategies, and the behavior management skills used in the classroom by special educators to support the academic performance of special education students who are abusing substances.

Teacher disability assignment- refers to the primary disability of the students that a special education teacher instructs.

Statement of Purpose

The purpose of this study was to examine special education teachers' perceptions of knowledge of substance abuse and related classroom pedagogy. Specifically, this study used a survey design to gather information on special education teachers' perceptions of four substance abuse areas, and their instructional and behavioral management skills to address students with disabilities who are abusing substances.

Research Questions

The following research questions guided this study:

1. What are special education teachers' perceptions of substance abuse intake among their students?
2. What are special education teachers' perceptions of their own knowledge of different substance abuse areas?
3. What are special education teachers' perceptions of their classroom knowledge in addressing instructional and behavioral management issues of special education students abusing substances?
4. Are there differences in the teachers' perceptions of substance abuse knowledge and related classroom pedagogy skills across:

(i) School levels: kindergarten/elementary, middle, and high school

(ii) School locations: rural, urban, and suburban

(iii) Teacher disability assignments (as determined by their students' primary disability). This research question focused on special educators who teach students with learning disabilities (LD), those with behavior/emotional disorders (BD), and students with mild mental retardation (MR).

CHAPTER 2

LITERATURE REVIEW

This chapter provides an overview of the literature examining special educators' perceptions on topics related to substance abuse. Specifically, the review focuses on four topics: (a) teachers' perceptions of substance use/abuse among their students, (b) teachers' perceptions of their students need to be knowledgeable about substance abuse issues, (c) teachers' reports on their instructional practices related to substance abuse, and (d) teachers' reports on their knowledge and competence in addressing substance abuse issues in the classroom.

The literature examined within this review was identified through computer and hand searches. In the former, the searches included Elton B. Stephens Company (EBSCO) and several other on-line sources such as Educational Resource Information Center (ERIC), Education Full Text, PsychInfo, Google Scholar, Social Services Abstracts, Sociological Abstracts, Web of Science, and Dissertation Abstracts. The search concentrated on gathering studies focused on the perceptions and practice of special education teachers on substance abuse issues. Descriptors used were, skills*, competence*, perception*, knowledge*, insight*, awareness*, perspectives*, attitudes*, responses*, opinion*, experiences*, intuition*, roles*, role expectations*, role taking*, role playing*, school role*, staff role*, teacher role*, role satisfaction*, job satisfaction*, satisfaction*, teacher effectiveness*, and perspective taking*. To ensure no studies were omitted, additional descriptors were later used such as training*, teacher personnel

training*, school personnel*, practice*, educational practices*, evidence based practice*, and teacher guidance*.

In order to capture the greatest number of articles, each of the above strings of descriptors were used in separate combinations. This was done using the "advanced search" option found in the databases. The first combination involved merging all the descriptors (focusing on teachers' perception) above, with (substance abuse, substance addiction, drug abuse, drug addiction, drug use) and (special education teachers, special educators, special teachers). The second combination merged all the descriptors identified in the second search (on practice and the role of special education teachers) with (substance abuse, substance addiction, drug abuse, drug addiction, drug use) and (special education teachers, special educators, special teachers). Published textbooks were also considered.

Searches were also concentrated on teacher journals such as *Journal of Teacher Education, Teacher Education and Special Education, Teaching and Teacher Education, Action in Teacher Education, Educational Psychology, Exceptional Children, Journal of Special Education, Remedial and Special Education, Intervention in School and Clinic, Behavioral Disorders, Journal of Learning Disabilities*, and *Teacher Education and Practice*. To facilitate this search, an additional row was created in the "advanced search" option and an entry made of all the above journals. In cases where this was not feasible, only one or two journals were entered and a search made.

Journals pertaining to drug abuse were also examined such *as Journal of Alcohol and Drug Education, Substance Use & Misuse, The International Journal of the*

Addictions, Additive Behaviors, Addiction, American Journal on Addictions, and *Journal of Child and Adolescent Substance Abuse*. To facilitate this search, an additional row was created in the "advanced search" option and an entry made of all the above journals. In cases where this was not achievable, only one or two journals were entered and a search made.

Articles that were not available electronically were either obtained in hard copy form or through the university's interlibrary loan service. Reference lists of the read articles were surveyed to cross-reference and establish whether any other documents met the criteria. The primary authors of the articles read were also cross-checked to see if they had since written other articles related to this topic. Documents were examined mainly for research focus, participants, methodologies, and results. Due to the scarce literature and studies on this topic, the author focused on articles from 1990 - 2010.

The initial search located 45 articles from which seven studies met the inclusion criteria (see Appendix A). Three of these articles were obtained through a hand-search. The criteria for inclusion were:

- Participants included special education teachers from K-12, from all school levels and class types.
- When personnel other than special education teachers were included in the study (e.g., general education teachers, school counselors, school psychologists) data pertaining to special education teachers was reported separately.
- Studies focused on or examined substance use/abuse related topics, such as tobacco use, alcohol use/abuse, and/or drug use/abuse in general.

- When data included more than substance use/abuse issues (e.g., HIV/AIDS, sex education, gang activity etc.), data pertaining to substance use/abuse was reported separately.
- Studies focused on special education teachers' perceptions of substance use/abuse among their students, their perceptions of the need for their students' knowledge on the topic, their reports on their instructional practices on the topic, and their reports on knowledge and competence on substance use/abuse issues.
- Studies were conducted from 1990 to 2010.

Articles were excluded if they focused on: (a) specific prevention programs, (b) program intervention/s, (c) determination of the efficacy of a particular program, (d) substance abuse teacher training or preparation, (e) assessment and treatment of substance abuse, (f) prenatal substance abuse, (g) information on school safety and/or reducing school violence, (h) discussion of the role special educators should/could play, and (i) studies conducted prior to 1990.

Seven studies met the criteria for inclusion in this review. Three of the studies primarily used survey data, one study used qualitative data (Lamorey & Leigh, 1996) another utilized questionnaire data (Fowler & Tisdale, 1992), while two studies (Lamorey & Leigh, 1999; Leigh, Huntze, & Lamorey, 1995) used mixed methodology of survey and qualitative data. Five of the studies (Fowler & Tisdale, 1992; Genaux et al., 1995; Lamorey & Leigh, 1999; Leigh et al., 1995; Prater & Serna, 1993) employed a self-designed instrument, with two of the studies (Lamorey & Leigh, 1999; Leigh et al., 1995) utilizing the same instrument. Since the studies' research methods were heterogeneous,

and they were not intervention studies to permit a statistical summary, a narrative method, which involves tabulating the study findings (see Appendix B), while accounting for the critical appraisal of the studies (see Appendix C), was used to review the seven studies (Cooper, 1998).

Teachers' Perceptions of Substance Use/Abuse Among their Students

Two quantitative studies (Fowler & Tisdale, 1992; Genaux et al., 1995) examined special education teachers' perceptions of substance abuse among their students. Data was gathered using a mailed open-ended questionnaire and a survey, both of which were researcher developed. The participants in Genaux et al. comprised only teachers of students with BD, while the Fowler and Tisdale sample consisted of teachers who taught different exceptionalities. The overall findings were: (a) special education teachers perceived their students used substances or were at high risk for substance use, and (b) teachers in special schools perceived higher use of substances among their students than teachers in other classroom settings.

The limited data across both studies (Fowler & Tisdale, 1992; Genaux et al., 1995) revealed that 50 to 70% of special education teachers believed that at least one student in their class abused illegal substances or was at high risk of using. For instance, in Genaux et al. when asked to indicate in a five-point Likert- type scale (never - once a day) how often they thought the students they served used illegal substances, 52.7% of the one hundred and nine teachers perceived their students were using. Similarly, in the Fowler and Tisdale study, while responding to a question concerning identification of students having substance abuse problems, 70% of the one hundred and sixty-six teachers also

believed that one or more of their students were at high risk for substance abuse problems. Out of this 70%, 23% reported that five or more of their students were at high risk for abusing substances.

Each of the studies further disaggregated data to reveal trends that varied by setting and disability category. Teachers in special schools indicated a higher rate of indulgence among their students than teachers from other classroom settings. For instance, in Genaux et al. (1995) teachers in the special schools reported heavier use across all substances (59.47%) than teachers from other classroom settings (resource [47.53], self-contained [46.7%]). While the Fowler and Tisdale (1992) study did not further desegregate data by classroom settings, over half the teachers (64%) taught in special schools and constituted the 70% who indicated their students being at high risk for substances. One might infer that these teachers probably suspected heavier use of substances among their students in these settings.

Teachers' Perceptions of Need For Student Knowledge in Substance Use/Abuse Issues

Five of the seven studies (Genaux et al., 1995; Lamorey & Leigh, 1996; Leigh et al., 1995; Prater & Serna, 1992; Repie, 2005) examined whether special education teachers perceived the need for students with disabilities to be informed about substance use/abuse issues. Three studies (Genaux et al., 1995; Prater & Serna, 1992; Repie, 2005) used survey data, with two (Genaux et al., 1995; Prater & Serna, 1992) using self-developed instruments. Lamorey and Leigh utilized qualitative data, while Leigh et al. employed survey and qualitative data (one open-ended item). The survey instrument was researcher developed. Across the studies, the general findings were: (a) special education

teachers perceived their students needed more information on substance abuse issues than was currently being provided, and (b) secondary school teachers perceived a greater need for this information than their elementary counterparts.

One of the research questions in Lamorey and Leigh's (1996) qualitative study, sought to determine teachers' (N= 120) responses and opinions about the need, importance and/or appropriateness of addressing contemporary issues among students with disabilities. The data, which was reported as a whole and not desegregated by the contemporary issues, stated that overall, teachers strongly supported the proposition that special education students needed much more information and guidance related to contemporary issues, among which were tobacco use, drug use, and substance abuse. Findings were similar in the Leigh et al. (1995) mixed method study whose intent in the one open-ended question, was to examine special educators' opinions on whether they perceived a need for information on contemporary issues (which included tobacco use, drug use, and alcohol abuse) for their students. The narrative response data (one hundred and twenty six teachers [31%] responded to the optional comments section) indicated an overwhelming majority of the teachers reported their students were in great need for more substance abuse information, among others topics, than was currently provided.

Likewise, when teachers (N=50) in Prater and Serna (1993) were asked to indicate in a five-point Likert-type scale (1- strongly disagree to 5- strongly agree) whether a formal substance abuse prevention curriculum should be mandated in school, 66.67% of teachers strongly agreed this should be the case. In the Repie (2005) study whose intent in one of the research questions was to discern whether school personnel differed on

perceptions of need for services regarding student mental health problems (included substance abuse), the survey results indicated that special education teachers (N=250) significantly perceived a great need for substance abuse information for their students, compared to the other school personnel (descriptive statistics were not provided).

However, while teachers reported a great need for substance abuse information for their students, across three studies (Genaux et al., 1995; Prater & Serna, 1992; Repie, 2005) there were differences in school levels, with secondary teachers perceiving a higher need for this information than elementary teachers. In the Repie study, middle and high school teachers significantly ($p < .01$) reported substance abuse information as the most critical need compared to their elementary colleagues. Similarly, in Genaux et al. when special education teachers were asked in a three-point Likert-type scale (low priority- high priority) to indicate how often they thought substance abuse information should be taught to their students, secondary teachers (41.3%) perceived a higher priority than the elementary teachers (31.9%). Likewise, secondary teachers (69%) in Prater and Serna perceived a stronger need for mandating substance abuse curriculum compared to their elementary colleagues (62%).

Teachers' Reports on Instructional Practices on Substance Use/Abuse

Three studies (Genaux et al., 1995; Lamorey & Leigh, 1999; Leigh et al., 1995) focused on special education teachers' practices related to addressing their students' substance abuse. In two of the studies (Lamorey & Leigh, 1999; Leigh et al., 1995) both of which used mixed methodology, substance abuse (drug use, tobacco use, and alcohol abuse) was covered along with forty-five other contemporary issues in the classrooms.

The self-developed survey instrument of the forty-five topical issues was similar in both studies. The Genaux et al. study also used a self-developed survey instrument.

The salient findings across the studies were: (a) generally, special education teachers reported addressing substance abuse issues to a limited extent, (b) secondary school teachers reported attending to the topic more than their elementary colleagues, (c) teachers of students with BD reported addressing substance abuse issues slightly more than their colleagues (teachers of students with MR and LD), (d) in the latter, these teachers reported addressing the topic (besides contemporary issues) the least, and (e) teachers reported focusing more on information related to tobacco use, than drug use and alcohol abuse.

Extent of practices used to address substance abuse. Two studies (Genaux et al., 1995; Leigh et al., 1995) revealed that special education teachers addressed substance abuse issues to a limited extent. One of the survey questions in the Genaux et al. quantitative study asked teachers to indicate in a five-point Likert-type scale (never- once a day) how often they taught substance abuse prevention in their classroom. For the entire sample (N=109), approximately 27% reported never teaching substance abuse prevention, while 16.4% reported addressing the issue only once a year. However, 34.9% indicated addressing the issue once a month, and a much smaller percentage (19.6%) addressing it once a week. Although the highest percentage of teachers indicated they taught the subject at least once a month, the numbers were still very low (less than 35%).

Similarly, in the Leigh et al. (1995) mixed method study, teachers (N= 407) were asked in a four-point Likert-type scale (1-did not address to 4-address openly and

completely) the extent to which they taught contemporary issues (included substance abuse). The average mean of the extent of coverage for substance abuse issues (tobacco use, drug use, and alcohol abuse) was M = 2.92, on a scale ranging from M = 2.53 to M = 3.22. Although substance abuse had a relatively high mean, the rating indicated that teachers addressed the topic "to some extent", rather than "openly and fully", a finding reflected by the low percentages in Genaux et al. (1995) study. In the open-ended question, teachers in Leigh et al. were asked to provide comments regarding the importance of addressing contemporary issues with their students. While answering the question, a high number of teachers also indicated the shallow and sporadic nature of their attention to these topics. Numerous teachers also reported that on the occasions when topical issues were addressed, they stemmed as a result of student inquiry, as opposed to being planned discussions or lessons.

Differences in practices at school level. Data from two studies (Genaux et al., 1995; Leigh et al., 1995) indicated that secondary teachers addressed substance abuse issues (including other contemporary issues) more than their elementary colleagues. In Genaux et al., teachers were asked to indicate how often they taught substance abuse prevention in their own classroom in a five-point Likert-type scale (never- once a day). Secondary school teachers (19.8%) reported addressing the topic more than elementary teachers (15.1%). Leigh et al. found similar results when the authors analyzed teachers' survey reports to determine the extent to which elementary and secondary students received information from their teachers. Data revealed that secondary-level teachers reported addressing the forty-five contemporary issues (included substance abuse) to a greater

extent (M = 2.34) than did elementary-level teachers (M = 1.77).

Differences in practices in teacher category. Two studies (Lamorey & Leigh, 1999; Leigh et al., 1995) indicated that teachers of students with BD reported addressing substance abuse issues (besides other topics) more than teachers of students with MR or LD. The latter (LD teachers) addressed the topic the least. To answer one of the research questions, Leigh et al. analyzed teachers' survey reports according to teacher category, to determine whether there were varying degrees in the coverage of topic across student disability. Group means ratings indicated that teachers of students with BD reported addressing the topic on substance abuse issues more (M = 3.11) than the other two groups: teachers of students of MR (M = 2.99), and teachers of students with LD (M = 2.65). Although the teachers of students with BD addressed the topic more often, the mean was still low.

Not very different were group mean ratings reported in Lamorey and Leigh (1999), who examined their survey data to determine the extent to which special education teachers addressed contemporary issues (included substance abuse). Teachers of students with BD reported addressing topical issues to a somewhat greater extent (M= 2.24) than teachers of students with MR (M=2.03) or LD (M=1.88).

Differences in coverage of subtopics. Regarding substance abuse subtopics, results across two studies (Lamorey & Leigh, 1999; Leigh et al., 1995) indicated that special education teachers focused more on delivering information on tobacco use than drug use, and alcohol abuse. In the Leigh et al. mixed method study, the teachers' survey reports on their extent of coverage on forty-five contemporary issues pointed tobacco use as third in

terms of the extent to which it was discussed, followed further behind by alcohol abuse (32nd) and drug use (35th). The average mean ratings across disability groups reflected a similar finding in regard to tobacco use (M=3.03) but a slight difference in drug use (M=2.92) and alcohol abuse (M=2.8). Similarly, Lamorey and Leigh's analysis of teachers' survey data indicated urban special educators reported covering the topic on tobacco use slightly more (53%) than drug use (50%). Data on alcohol abuse was not available. In contrast, although the rural special educators reported addressing tobacco use more (60%), the difference in coverage to the other two topics was negligible: 59% drug abuse, 59% alcohol abuse. Nonetheless, across both studies, results demonstrated that special educators addressed issues on tobacco use slightly more than the other two topics: drug use and alcohol abuse.

Teachers' Reports on Knowledge of Substance Use/Abuse Issues

Three studies (Fowler & Tisdale, 1992; Genaux et al., 1995; Prater & Serna, 1993) analyzed special education teachers' perceptions of their knowledge in addressing substance use/abuse issues in their classroom. Two of the studies used a survey instrument, while Fowler and Tisdale used a questionnaire, which was mailed out to participants. All instruments were researcher developed. The general finding across the studies was that special education teachers reported they had relatively limited knowledge in substance abuse issues. Consequently, this negatively impacted their confidence level in identifying and/or addressing issues related to substance abuse issues in their classrooms.

In Genaux et al. (1995) teachers (N=109) were asked to rate their current level of

knowledge about substance abuse and prevention in five areas using a three-point Likert-type scale (inadequate to very adequate): types of drugs, prevalence of substance abuse, effects of substance abuse, prevention strategies, and treatment programs. Only 26.06% of teachers reported feeling "very adequate" in their knowledge of these areas, while 46.96% of the teachers reported feeling "adequate" in the same.

Similarly, Prater and Serna (1993) examined the teachers' perceptions regarding their preparedness and comfort in teaching substance abuse issues, among other three topics. Teachers (N=50) were asked to indicate how comfortable they felt addressing substance abuse issues. A bar graph with the scale "not prepared to little prepared" and "prepared to very prepared", was utilized to analyze the prior collected survey data, which was on a five-point Likert-type scale. For the analysis of this research question, the authors excluded the responses on the score of three, which constituted neutral responses, before drawing up the bar graph. The bar graph analysis indicated that 45% of the teachers reported feeling more prepared to teach substance abuse than two other topics. The low results were not much different from Genaux et al. (1995) where 47% of teachers had reported feeling only "adequate" to teach issues related to substance abuse. In both studies, the low percentage (below 50%) reflected an unsatisfactory competence level.

Fowler and Tisdale (1992) asked teachers (N=166) to indicate in a questionnaire item how many of their students had been identified as having a substance abuse problem. Most of the teachers (77.71%) reported that none of their students had been formally identified. Yet, 20% of the teachers were teaching pupils with definite substance

abuse problems.

Summary

The purpose of this literature review was to determine special educators' perceptions of their students' substance use/abuse; to examine the teachers' perception of the need for student knowledge on the topic; to gather teachers' instructional practices on this topic; and to examine teachers' perceptions of knowledge and competence in addressing substance abuse issues in the classroom.

From the findings, special education teachers perceive their students are taking substances, and also believe them to be at high risk for substance use/abuse. Second, teachers perceive a need for their students to have more information on substance abuse. Third, special education teachers address substance abuse issues in a limited manner. Finally, special educators report limited knowledge and competence in the area of substance abuse.

However, due to the quality of the studies, these results must be interpreted with caution. For instance, four of the seven studies used a convenient sample. Six of the seven studies utilized self-developed instruments that did not report construct validity or reliability coefficients (see Appendices A and C). Also, half the studies did not provide ample information on how the instrument was developed, or the full array of questions provided to participants. Additionally, other than one study (Lamorey & Leigh, 1996) the other studies did not provide information on how they went about coding and analyzing the open-ended items (e.g., Fowler & Tisdale, 1992). In other instances, the participants were too few, (e.g., N= 50, in Prater & Serna, 1992) or the response rate was too low

(25% - 41.3%). Also, the fact that similar researchers conducted three of the studies using the same data set (secondary analysis) may raise concern, especially because of the technical inadequacies in the studies such as, low response rate, and the lack of statistical information on the instrument.

Thus, these findings can only provide some idea of special educators' perceptions related to substance abuse issues, and offer no tangible implications. It should also be noted that the studies reviewed were only seven due to limited research on this topic, and even then, majority of these studies were more than a decade old. Hence, there is great need for more methodologically sound studies that examine special educators' perceptions in topics related to substance abuse. This study aimed at meeting this need, and extending the research in this area.

CHAPTER 3

METHOD

This study examined special education teachers' perceptions of knowledge on substance abuse areas and related classroom pedagogy. Specifically, the examination of their perceptions of knowledge focused on the following areas: types of substances frequently abused by students, physical/visible signs of substance abuse, effects of substance abuse on behavior, effects of substance abuse on cognition, and the perception of their knowledge in instructional strategies and behavioral management skills to support the academic performance of students with disabilities who are abusing substances. This chapter describes the research methodology used in this study, the research questions and hypotheses, participant information, instrumentation, data collection procedures, data cleaning, and data analysis. These components are important to a study because they relate to the quality of the data collected, and how successfully the study was conducted (Fowler, 2002).

Research Methodology

This study employed survey methodology (Babbie, 2008; Dillman, 2007; Fowler, 2002) to help determine special education teachers' perceptions of knowledge on the six substance abuse areas listed above. The research method used in the study involved the administration of a researcher-developed online survey questionnaire designed to assess the teachers' perceptions of knowledge in the content areas.

Surveys are an effective means of gathering information on specific topics from particular populations. They are suitable because they allow the researcher to get

numerical information for exploring and generalizing the results from some specific population (Babbie, 2008). Continuing growth in the use of Internet to support teaching and learning has led to large-scale replacement of paper surveys with electronic versions. Online surveys are considered effective due to their ease of use. Additionally, since they are self-administered, participants are free to control their response time in answering each survey question (Cooper, 1998).

Eliminating the cost of printing hard-copy surveys is often presented as one of the benefits of Internet surveys (Dillman, 2007). However, it would be difficult to use Web-based surveys when participants in the sample have limited access to computers and the Internet. Fortunately, this study surveyed special educators who typically have e-mail addresses, computers, and Internet access in their work environments.

Research Questions

The research questions that guided this study were as follows:

1. What are special education teachers' perceptions of substance abuse intake among their students?
2. What are special education teachers' perceptions of their own knowledge of different substance abuse areas?
5. What are special education teachers' perceptions of their classroom knowledge in addressing instructional and behavioral management issues of special education students abusing substances?
6. Are there differences in the teachers' perceptions of substance abuse knowledge and related classroom pedagogy skills across:

(i) School levels: kindergarten/elementary, middle, and high school

(ii) School locations: rural, urban, and suburban

(iii) Teacher disability assignments (as determined by their students' primary disability). This research question focused on special education teachers teaching students with learning disabilities (LD), with behavior disorders (BD), and students with mild mental retardation (MR).

Hypotheses

There were four hypotheses in this study, and each hypothesis corresponded to a major research question:

1. *What are special education teachers' perceptions of substance abuse intake among their students?* Given the growing recognition of substance abuse among students in general (DiGiovanni, 2006, Johnston et al., 2002; Johnston et al., 2007), this study anticipated over 50% of the participants to report that their students were abusing substances, similarly to what was reported in previous studies (Fowler & Tisdale, 1992; Genaux et al., 1995). I also expected that most teachers (over 50%) would report that 25%-50% of their students were abusing substances.
2. *What are special education teachers' perceptions of their knowledge of different substance abuse areas?* In concordance to the Genaux et al. (1995) survey results, I anticipated different means from respondents' reports across the four substance abuse areas. Specifically, I expected the highest mean to be in the respondents' reports on their knowledge in types of substances frequently abused by students,

followed by a close second to the mean rating of their reports on knowledge of physical signs of substance abuse. In third place, I anticipated the respondents' mean rating of their reports on knowledge of effects of substance abuse on behavior. Finally, I expected the lowest mean to be reflected in the respondents' reports on their knowledge of effects of substance abuse on cognition since this requires some understanding of how substance abuse changes the activity of the brain and nervous system, thereby impacting the victim's process of thinking, reasoning, and making judgment (Erickson, 2007).

3. *What are special education teachers' perceptions of their classroom knowledge in addressing instructional and behavioral management issues of special education students abusing substances?* Since teachers are generally not provided with this information in their teacher training programs (e.g., Watson, Gable, & Tonelson, 2003), I expected that most respondents (over 50%) would report *none* to *a little* knowledge in addressing instructional and behavior management issues of special education students abusing substances.
4. *Are there differences in the teachers' perceptions of substance abuse knowledge and related classroom pedagogical skills across:*

    (i) School Level

    Generally, I anticipated differences across school levels on respondents' perceptions of their knowledge of the four substance abuse areas: types of substances frequently abused by students, physical signs of substance abuse, effects of substance abuse on

behavior, and effects of substance abuse on cognition. In concordance with Genaux et al. (1995) I anticipated that high school respondents would report the highest knowledge in the four substance abuse areas, closely followed by middle school teachers, with kindergarten/elementary teachers reporting the least knowledge. However, I expected no significant differences across the school levels in the respondents' perceptions of knowledge on two of the substance abuse areas: physical signs of substance abuse and effects of substance abuse on behavior. This is partly because, in their lifetime, many respondents may have encountered or been exposed to people under the influence of alcohol, if not drugs. As a result, this may make it easier for them to identify the physical signs and behavioral effects of substance abuse.

Concerning respondents' perceptions of knowledge of related classroom pedagogy (instructional and behavior management strategies to address special education students who are abusing substances), I anticipated no significant differences across school levels, as research (e.g., Watson et al., 2003) indicates that teachers are generally not provided with this information in their teacher training programs.

(ii) School Location

Although, as noted in previous research (Genaux et al., 1995),

there may be differences across the six areas: types of substances frequently abused by students, physical signs of substance abuse, effects of substance abuse on behavior, effects of substance abuse on cognition, instructional strategies, and behavioral strategies, I anticipated no significant differences across the three school locations. However, I expected that compared to their counterparts, urban school respondents may report having slightly more knowledge on three substance abuse areas: types of substances frequently abused by students, physical signs of substance abuse, and effects of substance abuse on behavior. This is because the broad array of socio-economic and environmental problems that tend to be associated with urban areas, for instance, low income, poverty, home and/or neighborhood instability, and high drug abuse (Noguera, 2003) place students with disabilities at high risk for substance use/abuse, as noted in previous research (McCombs, 2002; Stevens & Smith, 2005). Consequently, special educators in urban areas may have been faced with substance use/abuse challenges from their students, thereby prompting them to be more knowledgeable about the topic.

(iii) Teacher Disability Assignment

Similar to previous research (Genaux et al., 1995), I anticipated that respondents teaching students with BD would report

significantly more knowledge on three substance abuse areas: types of substances frequently abused by students, physical signs of substance abuse, and effects of substance abuse on behavior, in comparison to their counterparts: respondents teaching students with LD, and respondents teaching students with MR. I expected that respondents in the latter category would report the least knowledge in the three substance abuse areas.

Also, while there may be differences across respondents' reports in the area of effects of substance abuse on cognition, I anticipated no significant differences across the three groups: respondents teaching students with BD, respondents teaching students with LD, and those teaching students with MR. This is because to understand the effects of substance abuse on cognition, one needs to understand how drugs function in the brain and the nervous system (Erickson, 2007). I suspected that majority of the respondents did not possess this level of understanding.

Concerning the area of instructional and behavioral strategies, I anticipated no significant differences across the three respondent groups as research (e.g., Watson et al., 2003) indicates that teachers are generally not provided with this information in their teacher training programs.

Participants

For this study, 5,000 participants were randomly selected from the nation. Specifically, stratified sampling (Babbie, 2008; Fowler, 2002) was used to select the sample. This method allows the researcher to obtain a greater degree of representativeness by decreasing the probable sampling error. Also, the proper representation of the stratification variables enhances the representation of other variables related to them, thus making the sample more representative on several variables than what one would obtain from a simple random sample (Babbie, 2008). The sample in this study was stratified for the seven national geographical regions (New England, Mid-Atlantic, Southeast, Midwest, Southwest, Mountains/Plains, West), school level (kindergarten/elementary, middle, and high school), and school location (urban, rural, and suburban).

Participants e-mail addresses were obtained by renting an email database from Marketing Data Retrieval. Marketing Data Retrieval (MDR) is a marketing company specializing in the field of education, with services ranging from market research and trend analysis, to the rental of educational mailing lists (MDR, 2008). Several national surveys published in peer-reviewed education journals have used the services of MDR to recruit and contact a national sample of teachers (e.g., Fresch, 2007; Graham, Harris, Mason, Fink-Chorzempa, Moran, & Saddler, 2008). According to the MDR website, they currently posses contact information for 511,680 special education teachers. Of these 511,680, MDR has email addresses for 74,730 teachers. From this pool of 74,730, MDR randomly selected 5,000 for this study.

Confidentiality and Anonymity

Confidentiality was achieved by MDR not disclosing the names, email addresses, or any identifying information of the participants. To achieve anonymity, respondents were directed to a Website link to complete their survey, as opposed to replying to an email address (Dillman, 2007; Sue & Ritter, 2007).

Instrumentation

Survey Development

The survey development for this study involved two steps: modifying the survey questions featured in two of the seven synthesized studies (Genaux et al., 1995; Prater & Serna, 1993), and revising the survey question items based upon feedback from substance abuse and teacher education experts, survey research professionals, my dissertation committee, colleagues, and participants from the pilot study.

Pilot testing involves giving the survey to a small group of volunteers with similar characteristics as the participants in the study, and asking for feedback regarding the clarity and feasibility of the survey (Buckingham & Saunders, 2004; Fowler, 2002). The pilot testing was conducted with thirty special education masters and doctoral students, at the University of Texas at Austin, who were full-time or part-time special education teachers. The participants completed the survey online obtained through surveymonkey.com. The suggestions provided by the participants to improve the survey were considered in the development of the final version of the instrument.

Survey Content

The survey instrument consisted of two sections. Section 1 (twenty-three questions) asked respondents to answer a series of forced-choice and Likert-type rating scale questions in relation to their perceptions of knowledge in various substance abuse areas. There was only one open-ended item, which was optional. Section 2 (eleven questions) focused on the participant demographics. The following describes the instrument in detail (see Appendix F for the complete survey instrument).

Section 1 asked participants to: (a) state the extent of substance abuse intake among the students they instruct, (b) rate their knowledge in four substance abuse areas, (c) rate their classroom knowledge in instructing and managing the behavior of special education students who are abusing substances, (d) indicate and provide reasons pertaining to whether or not they perceive it necessary to have knowledge about substance abuse, and related classroom pedagogical skills to support the academic performance of special education students who are abusing substances, (e) indicate the extent to which information in these six substance abuse areas was provided in their teacher preparation coursework, and (f) rate their level of importance in receiving information in these areas. The following list describes these groups of questions:

1. The first two questions (1/2) determined respondents' perceptions of their students' substance abuse intake. The first question asked respondents to answer a yes/no question on whether they thought any of the students they instructed were abusing substances. The second part asked respondents to report what percent of the students they instructed abused substances. In this question, there were five

choices to select from, ranging from “none” to “over 50%” with a sixteen point range between the five options.

2. The next two questions (3/4) focused on the respondents’ perception of knowledge of substance abuse related areas. Question three was a general question asking respondents to indicate, on a five-point Likert-type rating scale (*very important* to *don’t know*), the importance of special education teachers being knowledgeable about substance abuse related areas. Question four asked respondents to rate on a five-point Likert-type rating scale (0=none to 4=a great deal) their level of knowledge on four substance abuse areas: types of substances frequently abused by students, physical/visible signs of substance abuse, effects of substance abuse on behavior, and effects of substance abuse on cognition.
3. Questions five and six examined the respondents’ perceptions of knowledge in classroom pedagogical skills to support special education students who are abusing substances. Question five was a general question asking respondents to indicate, on a five-point Likert-type rating scale (*very important* to *don’t know*), the importance of special education teachers being knowledgeable about instructional and behavior management skills to support the academic performance of special education students who are abusing substances. Question six asked respondents, on a five-point Likert-type rating scale (0=none to 4=a great deal), to rate their level of instructional and behavior management skills in supporting the academic performance of special education students who are abusing substances.

4. Question seven was an optional open-ended item. This question asked respondents to briefly (in one to five sentences) provide reasons why they perceived it important or not important for special education teachers to be knowledgeable in substance abuse and classroom pedagogical skills to support the academic performance of special education students who are abusing substances.
5. Question eight asked respondents to indicate the extent to which their teacher preparation coursework provided them with knowledge of the six content areas: types of substances frequently abused by students, physical/visible signs of substance abuse, effects of substance abuse on behavior, effects of substance abuse on cognition, instructional, and behavior management strategies to support the academic performance of this student population. The respondents were to indicate their responses on a five-point Likert-type scale (0=none to 4=a great deal).
6. The last question (nine) in this section asked respondents to indicate, on a five-point Likert-type scale (0=not at all important to 4=extremely important), how important it was for them to receive information in the six content areas mentioned above.

Section 2 of the survey asked for demographic and teaching assignment information. Through the use of forced-choice items, the following information was solicited: (a) state and metropolitan area where the participant taught, (b) current teaching assignment and school level where participant taught, (c) the primary disability category of students served by the participant, (d) years of teaching experience as a special educator, (e) type

and level of special education degree and certification, and (d) participant's age, gender, and race/ethnicity.

Internet Data Collection

An online survey was chosen as the data collection tool for this study. MDR sent the invitation emails using their servers, but a University of Texas at Austin address was identified as the sender. MDR staggered the sending of the emails to reduce the possibility of the emails being labeled as "junk mail." The email sent to the participants contained a URL link accessing the survey to a Web-based commercial survey development program: surveymonkey.com. Professional subscription of this program was purchased. The survey questions were posted on this site so that participants could anonymously submit their survey responses. The raw data collected was stored safely in the researcher's surveymonkey.com web server account, and could easily be downloaded into the university's Windows terminal server, which allows the use of different statistical packages (e.g., The Statistical Packages for the Social Sciences [SPSS], Statistical Analysis System [SAS], and Hierarchical Linear Model [HLM]).

Reliability of the Instrument

The reliability of an instrument is important because it ensures the consistency of the outcome of what the instrument is measuring (Buckingham & Saunders, 2004). Cronbach's alpha was employed to determine the internal reliability of the survey. Alpha coefficients were computed for each of the four sections yielding the following results: importance of being knowledgeable of substance abuse areas (0.643; n=2 items); current level of knowledge (0.851; n= 6 items); teacher preparation coursework (0.949; n= 6

items); and the importance of receiving information (0.958; *n*= 6 items). The overall reliability of the entire survey yielded a coefficient alpha of 0. 856 (*N*=20 items), and was therefore acceptable based on the criterion of 0.70 as a minimally acceptable value (Bobko, 2001; Litwin, 1995).

Validity of the Instrument

The validity of an instrument is crucial in that it ensures that an instrument actually measures what it is supposed to measure (Babbie, 2008; Fowler, 2002). Content validity is the degree to which the sample of survey items represents the content that the survey intends to measure. Construct validity is the extent to which a particular survey measures a hypothetical construct, and interpretive validity is the degree to which a survey appears to measure what it purports to measure (Fowler, 2002). Several steps were taken to measure the validity of the survey instrument in this study.

First, the survey items were adapted from two of the seven synthesized studies (Genaux et al., 1995; Prater & Serna, 1993). Additional questions appropriate to this study's research questions were also created by the researcher and included in the development of the survey.

Second, feedback and professional advice was obtained from my committee members, experts in the field of teacher education, substance abuse, and survey research, who checked for: (a) wording of the survey questions and accompanying instructions, (b) whether the survey questions addressed the research objectives, and (c) the coherence and logical flow of questions (Buckingham & Saunders, 2004; Fowler, 2002). During the

proposal meeting for this study, committee members also provided additional suggestions to further improve the survey instrument.

Pretesting the Survey Instrument

After making the necessary revisions, pretesting of the instrument (Alreck & Settle, 2004; Sue & Ritter, 2007) was conducted through a pilot study involving thirty special education master's and doctoral students, at The University of Texas at Austin, who were full-time or part-time special education teachers. The participants were asked to complete the online survey (accessed via surveymonkey.com) and to provide feedback regarding: (a) the clarity of questions and accompanying instructions, (b) the proper functioning of the technical elements of the survey, and (c) the time taken to complete the survey (Alreck & Settle, 2004). The feedback provided from the pilot study was considered in the final version of the survey instrument. The feedback included deleting the last question in the original survey (*rating the importance in making decisions)* as it was confusing for the majority of the respondents, and rewording some of the items to make them clearer. For instance, question 6a was reworded from *classroom instructional strategies to address special education students abusing substances* to *classroom instructional strategies to support the academic performance of special education students who are abusing substances*. Once the final revisions were made, the researcher accessed and completed the survey online to curb the possibility of respondents skipping questions.

Data Collection

Data collection involved a pilot study and a formal study. The pilot study was conducted in February to mid March, 2009, and the formal study was conducted from February to May 2010. Prior to this, approval for conducting the research study was obtained from the Office of Institutional Review Board (IRB) at The University of Texas at Austin. The university was informed about the purpose and the content of the researcher's study, as well as how the study would be conducted.

Pilot Study

The purpose of the pilot study was to: (1) evaluate the clarity of the items to be used in the formal study; (2) ensure that the measurement instruments were reliable and valid before undertaking the formal study; and (3) rehearse and test the use of the prepaid online survey Website (surveymonkey.com), with regards to the designing of the survey, sending the online survey to my participants, and exporting the data for further analysis. The results of the pilot study served as the basis for fine-tuning the instrument and improving the online survey design, including the items displayed on each page, the font, and so on.

As mentioned, the survey was pilot-tested with thirty special education master's and doctoral degree students, at The University of Texas at Austin, who were full-time or part-time special education teachers. Alpha coefficients of the pilot study were computed for each section of the four sections yielding the following results: importance of being knowledgeable of substance abuse areas (0.715; n=2 items); current level of knowledge (0.949; n= 6 items); teacher preparation coursework (0.952; n= 6 items); and the

importance of receiving information (0.956; *n*= 6 items). In the last section, *rating the importance in making decisions*, five of the six items had a coefficient lower than 0.7, therefore this section was deleted from the survey. With this deletion, the results of the entire survey yielded a coefficient alpha of 0. 835 (*N*=20 items), hence meeting the criterion of the minimal acceptable coefficient value of 0.70 (Bobko, 2001; Litwin, 1995).

On the whole, the results of the pilot study indicated that the survey was acceptable in terms of reliability and validity. The questionnaire items as well as the online survey design were also deemed clear.

Formal Study

A different sample from the one used for the pilot study was used in the formal study. A total of 5,000 special educators across the nation were randomly sampled and invited to complete the online survey hosted on surveymonkey.com.

The first e-mail invitation, with the survey link attached, was sent to the participants by MDR on February 18th 2010. The email informed the participants about the study and invited them to participate (see Appendix D for the sample of the first contact e-mail). Approximately a month later, March 30th, the second and final email invitation was sent to the participants who had not responded to the survey (see Appendix E for the second and final contact email). The second reminder was in an effort to improve the low response rate (3.5%) obtained from the first deployment. Due to financial constraints, the researcher was unable to send additional reminders to further improve the response rate. In total, three hundred and seventy participants responded to

the survey. However, fifty of the respondents did not complete the survey, and thus were dropped from the final statistical analysis.

Data Cleaning

The data collected was stored in the researcher's surveymonkey.com web server account. To reduce error in data handling, the data was directly downloaded into the university's Windows terminal server. The SPSS program, Version 18, was employed for the data cleaning of this study.

Three hundred and twenty respondents completed the survey in its entirety. Data cleaning involved looking for skewed data and outliers, and rectifying these errors in order to establish a normal or near-normal distribution in the variables. Specifically, after downloading the data, the descriptive statistics and graphic representations were examined to identify outliers and skewed data. To check for outliers, the z scores were examined to determine whether there were large standardized scores (Tabachnick & Fidell, 2001). In addition to examining the z scores, the graphic representations were inspected for outliers (Dillman, 2007; Sue & Ritter, 2007). To check for skewness, a test of skewness was run, and none was determined.

Data Analysis

Quantitative analyses were conducted using SPSS, Version 18. The first statistical procedure yielded the analysis of the participants' demographic information: the descriptive statistics, including frequencies, means, and standard deviations. Descriptive statistics were also run for each of the research questions. The next statistical procedure was a one-way analysis of variance (ANOVA) repeated measures (Gravetter & Wallnau,

2004). The ANOVA was employed to compare the means of the respondents' perception of knowledge between the substance abuse areas (e.g., types of substances frequently abused by students, with physical/visible signs of substance abuse).

Finally, an *A X B X C* multivariate analyses of variance [MANOVA] (Hair, Black, Babin, Anderson, & Tatham, 2005; Tabachnick & Fidell, 2001) was applied to determine whether differences existed on the participants' perception of knowledge across demographical domains (school level, school location, and teacher disability assignment). Chapter 4 discusses the statistical analysis in detail.

CHAPTER 4

RESULTS

The purpose of this study was to examine special education teachers' perceptions of substance abuse areas and related classroom pedagogical skills. Specifically, the examination of the teachers' perception of knowledge of substance abuse areas and classroom pedagogical skills focused on the following areas: types of substances frequently abused by students, physical/visible signs of substance abuse, effects of substance abuse on behavior, effects of substance abuse on cognition, and teachers' perception of knowledge in instructional strategies and behavioral management skills to support the academic performance of students with disabilities who are abusing substances. This study used a researcher-developed survey to collect the data from the participants. This chapter discusses the rate of response and missing data, demographic analysis of the participants, evaluation of nonresponse bias, the survey item analysis, and the survey results for each research question.

Rate of Response and Missing Data

A total of 5,000 special educators across the seven regions in the nation were sampled. After two survey deployments, a total of 370 individuals responded. However, out of the 370 who responded, fifty respondents did not complete the survey in its entirety and thus were dropped from the final count. As a result, the return rate was 6.46%, which is lower than the 50% response rate considered adequate for online surveys (Sue & Ritter 2007).

Table 4.1: Number of returned and missing surveys

No. of deployments	Original	Missing	Clicked	Incomplete	Final sample
1	5,000	24	196	22	174
2	4,240	20	192	16	176

Demographic Analysis of the Participants

Figure 4.1 presents descriptive analysis of the 320 respondents from the fifty-one states across the seven regions in the nation.

Figure 4:1: Percentage of participants' across the seven regions in the nation

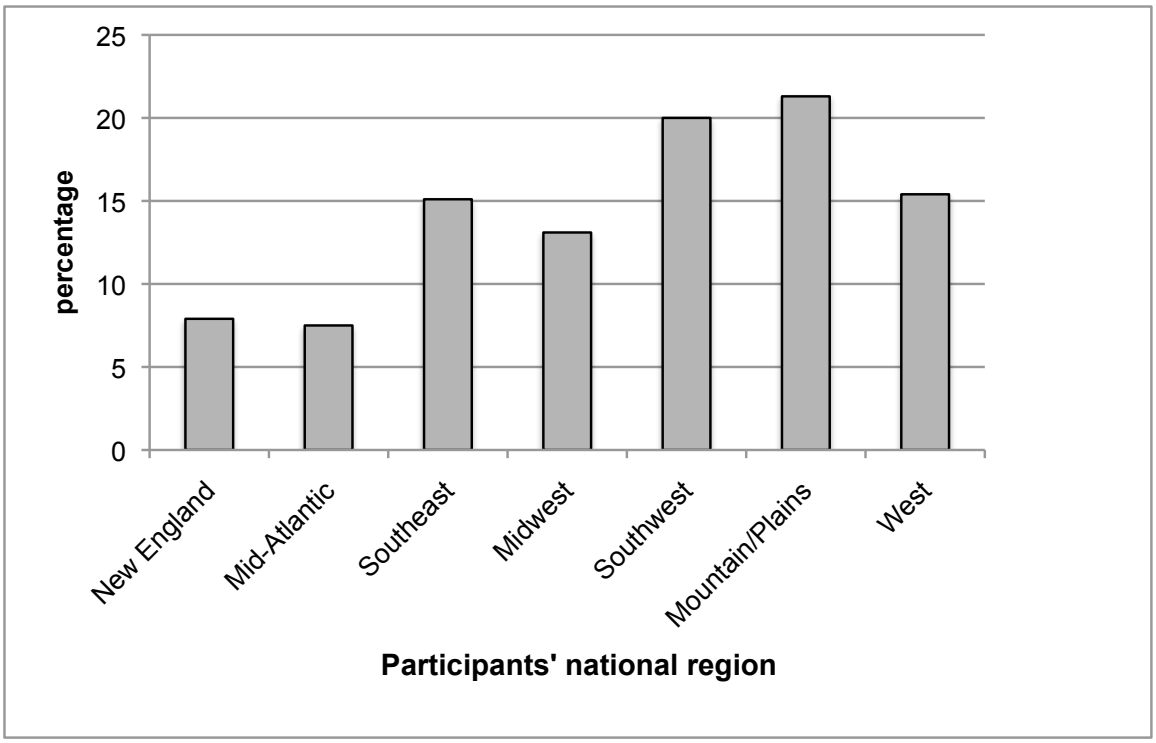


Table 4.2 presents the demographic analysis of respondents from each region, with an additional column reflecting demographic distribution of special education teachers nationally. There were no respondents from four states: District of Columbia, Delaware, West Virginia (Mid-Atlantic region) and North Dakota (Mountain/Plains region). The highest number of respondents was from the Mountain/Plains region (21.3%), while the Mid-Atlantic region had the lowest number of participants (7.5%). The percentage range of respondents from each of the seven regions was as follows: New England (.3-2.2%); Mid-Atlantic (0-2.2%); Southeast (.3-3.8%); Midwest (.6-2.5%); Southwest (.9-14.1%); Mountains/Plains (0-10.6%); West (.9-5.3%). The three states that contributed the highest number of respondents were Texas (14.1%), followed by Colorado (10.6%), and a distant third by California (5.3%).

Table 4:2: Participant demographics of the seven regions across the nation, & comparison with national sample

Region	Frequency (n); N=320	Percentage (%)	National sample n (%); N=382,192
New England region			
Connecticut (CT)	4	1.3	5,446 (1.4)
Massachusetts (MA)	6	1.9	6,745 (1.8)
Maine (ME)	1	.3	2,265 (0.6)
New Hampshire (NH)	7	2.2	2,728 (0.7)
Rhode Island (RI)	3	.9	2,423 (0.6)
Vermont (VT)	4	1.3	1,130 (0.3)
Total	25	7.9	20, 737 (5.4)

Table 4.2 (cont.)

Mid-Atlantic region			
District of Columbia (DC)	__	__	448 (0.1)
Delaware (DE)	__	__	927 (0.2)
Maryland (MD)	3	.9	6,386 (1.7)
New Jersey (NJ)	2	.6	19,747 (5.2)*
New York (NY)	7	2.2	42,552 (11.1)*
Pennsylvania (PA)	6	1.9	20,297 (5.3)
Virginia (VA)	6	1.9	12,631 (3.3)
West Virginia (WV)	__	__	2,678 (0.7)
Total	24	7.5	105,666 (27.6)
Southeast region			
Alabama (AL)	6	1.9	5,168 (1)
Florida (FL)	9	2.8	10,403 (2.7)
Georgia (GA)	12	3.8	16,151 (3.8)
Kentucky (KY)	6	1.9	6,793 (1.9)
Mississippi (MS)	4	1.3	873 (0.2)*
North Carolina (NC)	8	2.5	11,118 (2.5)
South Carolina (SC)	1	.3	6,006 (.3)
Tennessee (TN)	2	.6	6,261 (.6)
Total	48	15.1	62,773 (16.4)

Table 4.2 (cont.)

Midwest region			
Iowa (IA)	3	.9	6,155 (1.6)
Illinois (IL)	8	2.5	21,351 (5.6)
Indiana (IN)	4	1.3	7421 (1.9)
Kansas (KS)	2	.6	3,172 (0.8)
Michigan (MI)	6	1.9	12,610 (3.3)
Minnesota (MN)	3	.9	7,999 (2.1)
Missouri (MO)	2	.6	9,559 (2.5)
Nebraska (NE)	3	.9	2,414 (0.6)
Ohio (OH)	5	1.6	22,245 (5.8)
Wisconsin (WI)	6	1.9	8,313 (2.2)
Total	42	13.1	101,239 (26.5)
Southwest region			
Arkansas (AR)	3	.9	4,005 (1.0)
Louisiana (LA)	7	2.2	5,135 (1.3)
New Mexico (NM)	3	.9	3,875 (1.0)
Oklahoma (OK)	6	1.9	4,612 (1.2)
Texas (TX)	45	14.1	24,384 (6.4)*
Total	64	20	42,011 (11.0)
Mountain/Plains region			
Colorado (CO)	34	10.6	4,675 (1.2)*
Montana (MT)	5	1.6	896 (0.2)*
North Dakota (ND)	__	__	999 (0.3)
South Dakota (SD)	5	1.6	666 (0.2)*
Utah (UT)	19	5.9	2,326 (0.6)*
Wyoming (WY)	5	1.6	470 (0.1)*
Total	68	21.3	10,032 (2.6)

Table 4.2 (cont.)

West region			
Alaska (AK)	4	1.3	882 (0.2)*
Arizona (AZ)	9	2.8	6,299 (1.6)
California (CA)	17	5.3	19,964 (5.2)
Hawaii (HI)	5	1.6	1,673 (0.4)
Idaho (ID)	3	.9	1,056 (0.3)
Nevada (NV)	3	.9	2,656 (0.7)
Oregon (OR)	4	1.3	1,518 (0.4)
Washington (WA)	4	1.3	5,686 (1.5)
Total	49	15.4	39,734 (10.4)

Note: Dashes indicate no participants from the particular state.
* Indicates significance level of p<. 05

Table 4.3 presents the descriptive analysis of the additional demographic variables of the 320 participants.

Table 4.3: Additional participant demographics

Other background variables	Frequency (n)	Percentage (%)
Principal school location		
Urban	99	30.9
Suburban	131	40.6
Rural	91	28.4
Current teaching assignment		
Part-time	8	2.5
Full-time	306	95.6
Other	6	1.9

Table 4.3 (cont.)

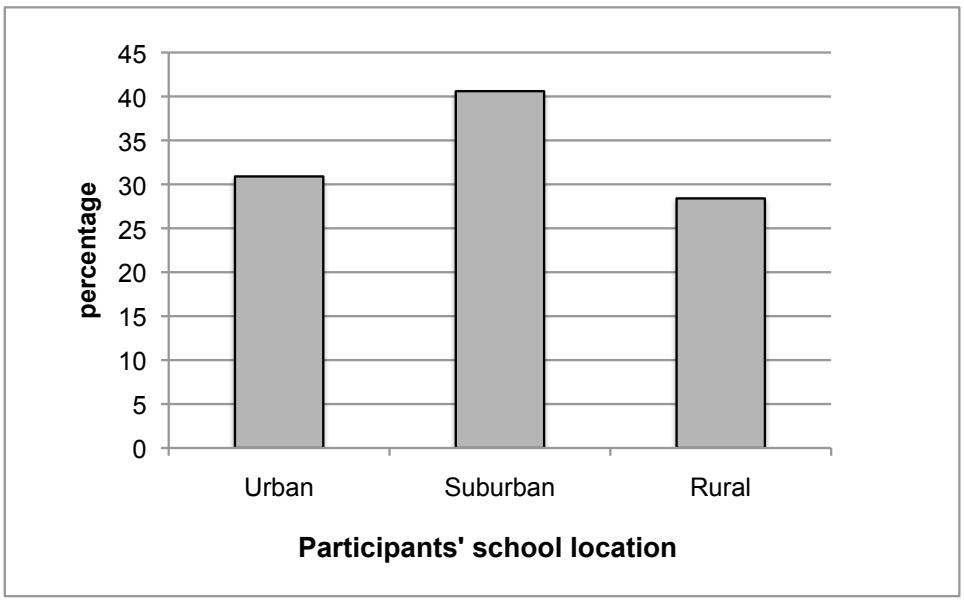
Principal school level		
Kindergarten only	30	9.4
Elementary	2	.6
Middle school/junior high	81	25.3
High school	98	30.6
Other	109	34.1
Teacher's primary disability category taught		
Learning disabilities/specific learning disabilities	193	60.3
Behavior disorders/EBD	45	14.1
Developmental disabilities	57	17.8
Multiple disabilities	12	3.8
Physical impairments	1	.3
Sensory impairments	1	.3
Speech or language impairments	3	.9
Other health impaired	8	2.5
Years of experience as a special educator		
0-2	16	5.0
3-5	60	18.8
6-9	56	17.5
10-15	68	21.3
16-20	31	9.7
Above 21	89	27.8
Special education certification		
Yes	305	95.3
No	15	4.7
Highest degree of special education		
BS/BA	108	33.8
Masters	191	59.7
Phd/EdD	6	1.9
Other	15	4.7
Gender		
Male	57	17.8
Female	263	82.2
Age		
20-30	28	8.8
31-40	73	22.8
41-50	80	25.0
51-60	113	35.3
Above 61	26	8.1

Table 4.3 (cont.)

Race/Ethnicity		
American Indian or Alaska Native	11	3.4
Asian or Pacific Islander	6	1.9
Black or African American	29	9.1
Hispanic	16	5.0
White	258	80.6
Other	0	0

School location. The majority of participants were suburban teachers (40.6%), followed distantly by urban teachers (30.9%) and rural teachers (28.4%) (see Figure 4.2).

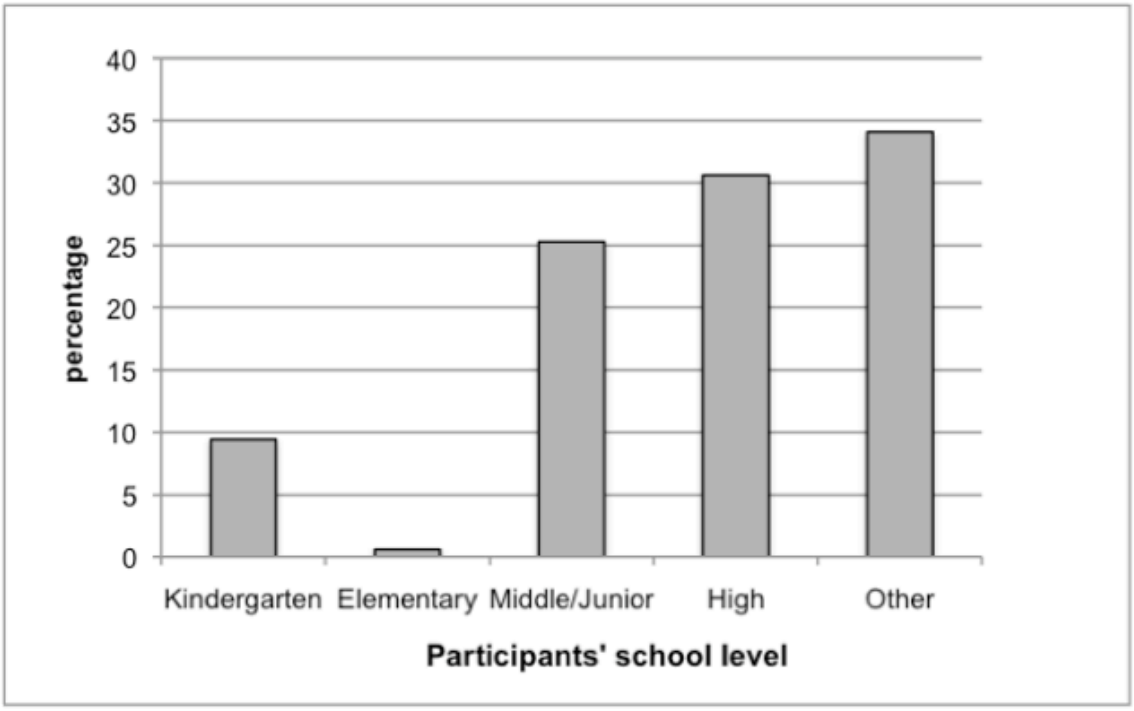
Figure 4.2: Participants' school location



Current teaching assignment. The majority of the participants were full-time special education teachers (95.6%). Less than 3% were part-time special educators, while less than 2% had other teaching arrangements.

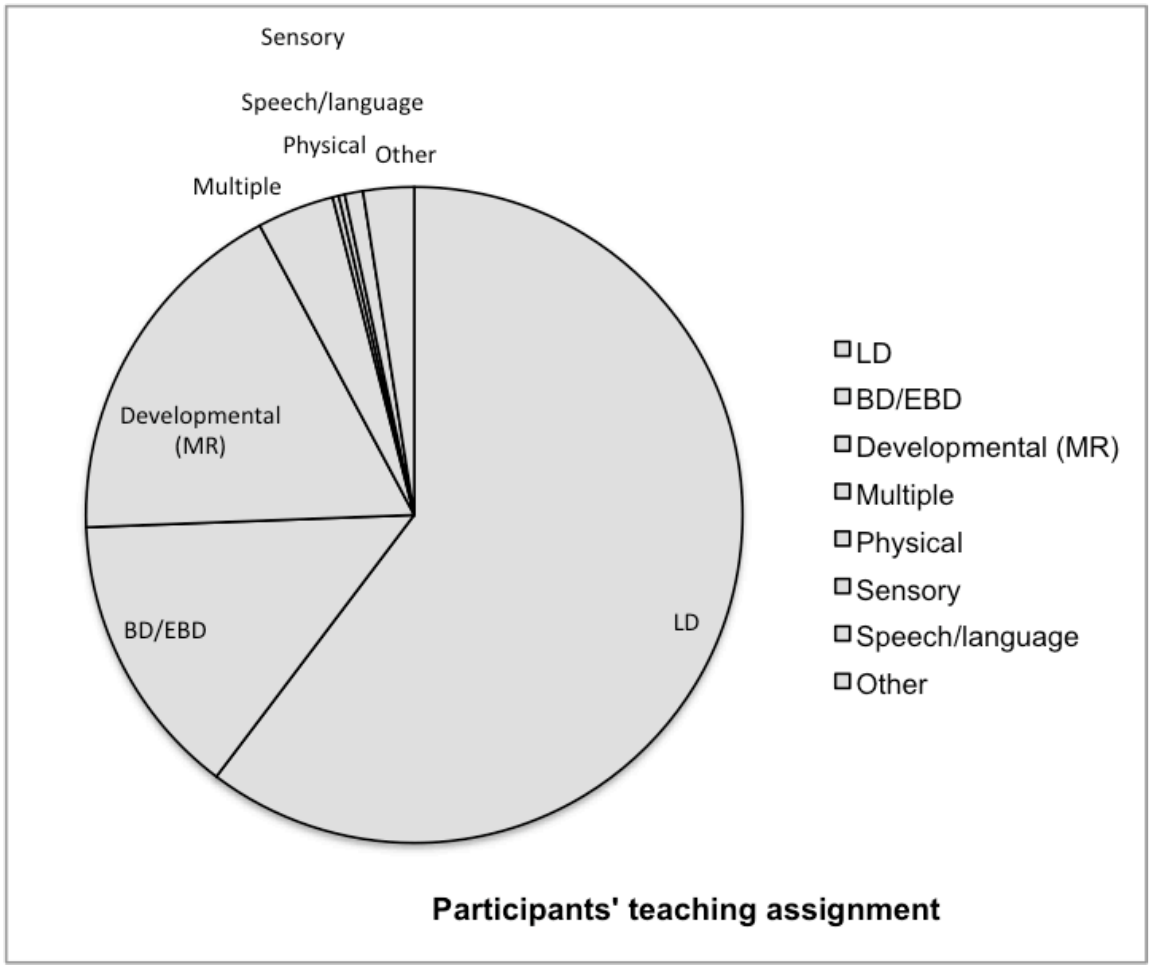
School level. Figure 4.3 presents the participants' principal school level that they taught. Most of the participants (34.1%) taught different combinations of school levels, such as kindergarten to 12th grade, middle and high school, kindergarten and middle school, to mention a few. The remaining of the participants identified their principal school teaching assignment as follows: high school (30.6%), closely followed by middle/junior high school (25.3%). The least number of participants were from elementary school (.6%), followed by kindergarten school (9.4%).

Figure 4.3: Participants' school level



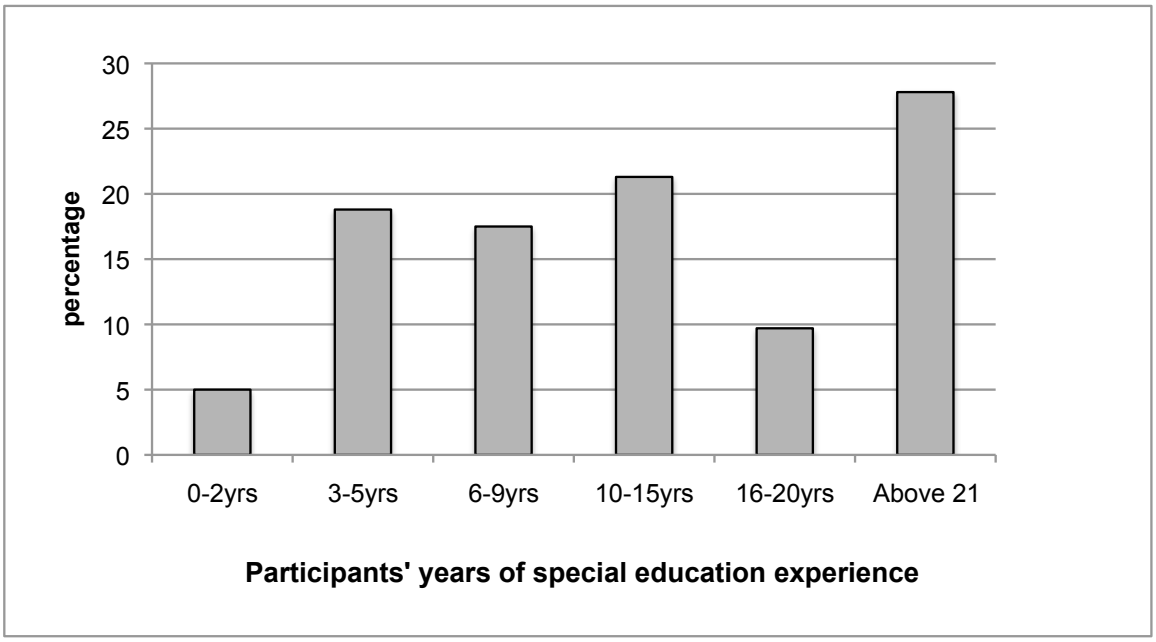
Primary disability category taught. Majority of the participants taught students diagnosed with a learning disability [LD] (60.3%) as shown in Figure 4.4. Following a distant second were participants who taught students with mental retardation [MR] (17.8%), and participants who taught students with behavior disorders [BD] (14.1%) respectively. Less than 8% of the participants taught students identified with other kinds of disability.

Figure 4.4: Participants' primary disability category taught



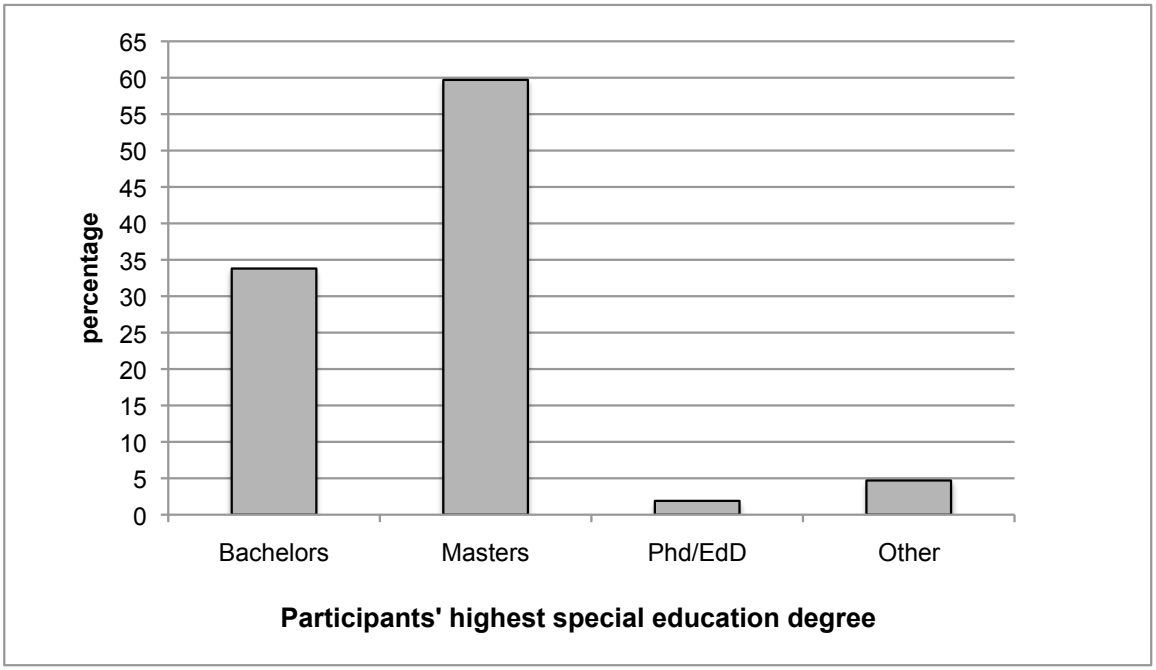
Special education teaching experience. In terms of instructing students with disabilities, majority of the participants (27.8%) had more than twenty-one years of experience (see Figure 4.5), closely followed by participants with ten to fifteen years of teaching experience (21.3%), and a distant third by teachers with three to five years of teaching experience (18.8%) as a special educator.

Figure 4.5: Participants' special education teaching experience



Special education certification and highest education. In regard to the former, majority of the participants (95.3%) had a special education certification. In terms of the highest educational degree, the numbers of participants holding a master's degree were the majority (59.7%), followed by those holding a bachelor's degree (33.8%). Only less than 2% had earned a doctoral degree, while less than 5% had obtained a different form of special education training, such as a diploma (see Figure 4.6).

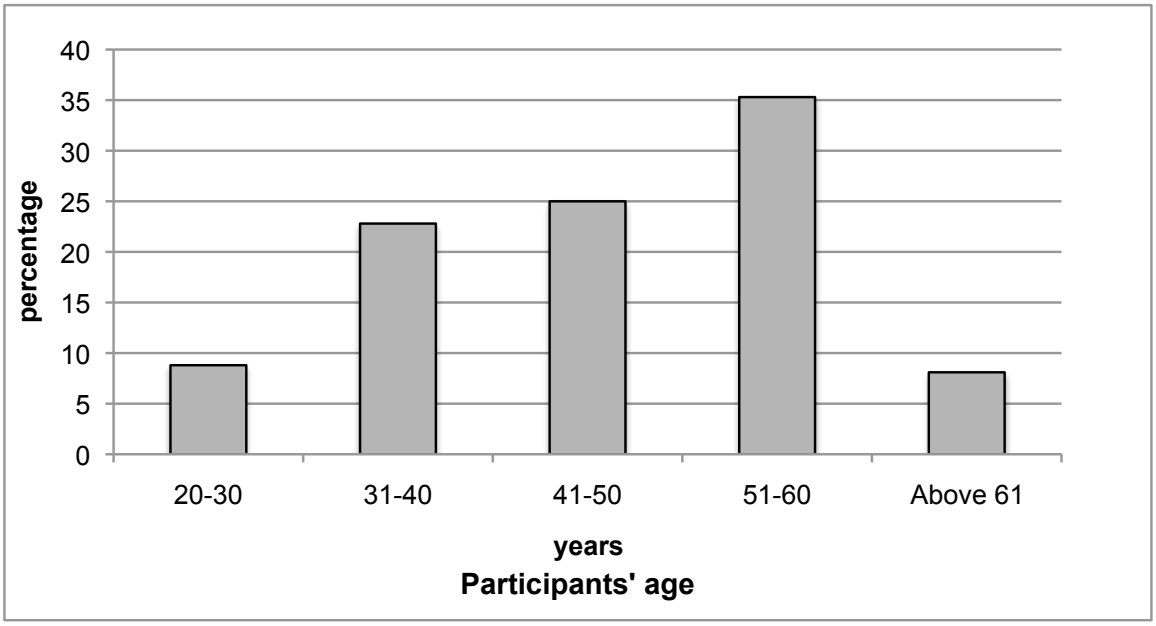
Figure 4.6: Participants' highest special education degree



Gender. Within the total of 320 participants, gender was distributed approximately 4 to 1, female to male, where 263 (82.2%) were females and 57 (17.8%) were males.

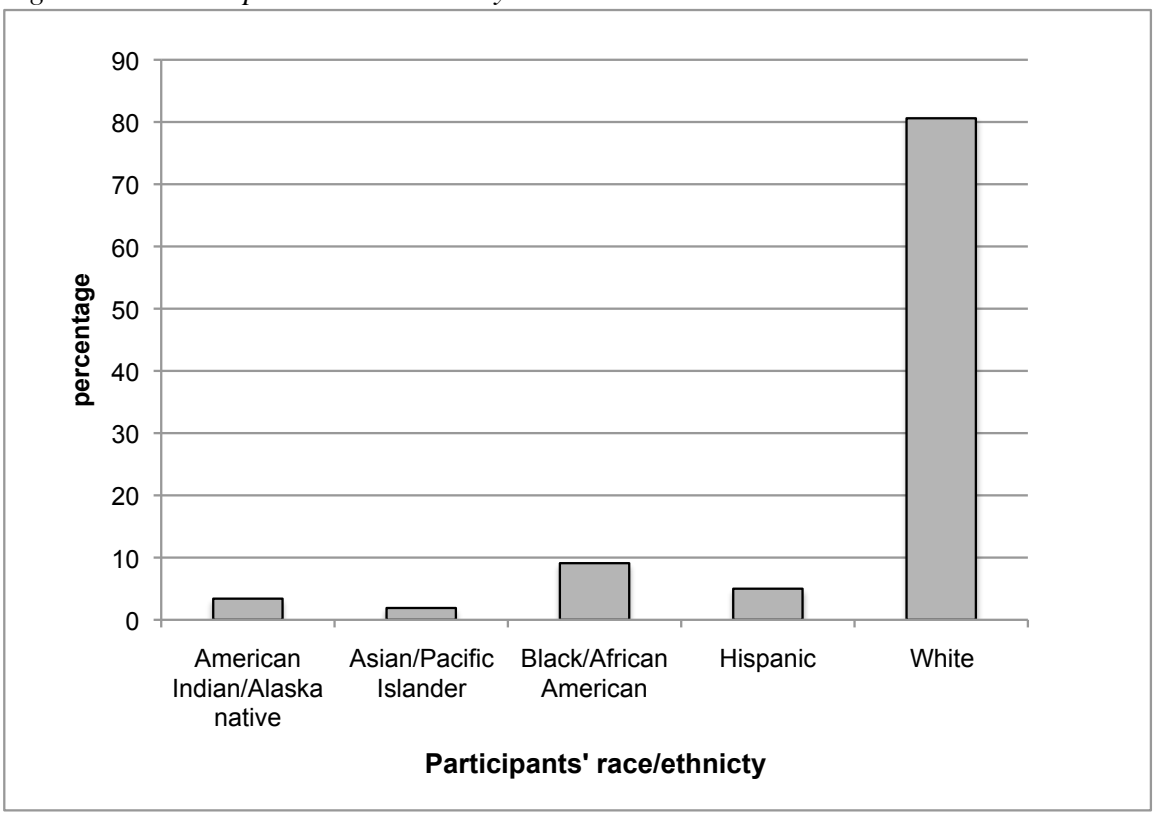
Age. The highest percentage of participants was fifty to sixty years old (35.3%), followed relatively closely by participants between forty-one to fifty years (see Figure 4.7). The least number of participants were those above sixty-one years (8.1%).

Figure 4.7: Participants' age



Race/ethnicity. Of the 320 participants, the majority were White (80.6%). A distant second, and third was the Black/African American group (9.1%), and the Hispanic cluster (5%) respectively (see Figure 4.8). The Asian/Pacific Islander category accounted for the smallest group (1.9%).

Figure 4.8: Participants' race/ethnicity



Evaluation of Nonresponse Bias

There were 320 respondents in this study, yielding a response rate of 6.46%. Nonresponse data may affect the validity of the findings, especially external validity (Dooley & Linder, 2003; Kano, Franke, Afifi, & Bourque, 2008). Although the sample in this study was designed as a probability sample, the obtained sample could not be analyzed as if it were a statistically representative sample of the population, given the low response rate. Therefore the following steps were taken to evaluate potential bias and to assess the effects of nonreponse on the generalizability of the research findings.

First, comparative national data of special education teachers was obtained from a primary source (U.S. Department of Education, Office of Special Education, 2007). The data provided the frequency distributions of special education teachers by state as indicated in Table 4.2 (p. 48). Because this was the only available data for special educators, it limited this analysis to univariate comparisons between respondents and nonrespondents (Rogelberg & Luong, 1998). The differences in frequency distributions between respondents and nonrespondents, by state were tested by running univariate *z* tests fifty-one times (Gravetter & Wallnau, 2004). The results indicated statistical significance ($p < .05$) in ten states (as shown in Table 4.2, p.48), implying an oversampling or under-sampling of respondents from these states.

The sample of participants in this study was stratified by the seven national regions. To determine whether there were differences in frequency distributions between respondents and nonrespondents by national region, a Pearson chi-square analysis (Kano et al., 2008) was run. The results were statistically significant ($p < .05$), meaning there were differences between the respondents and nonrespondents in the independent variable. Additionally, in regards to completing the survey, and likewise to the state results, it implied oversampling or under-sampling of respondents from certain regions. As a result, the findings of this study may not be generalizable to the larger population of special education teachers.

Survey Item Analysis

As described in chapter 3, several steps were taken to ensure validity of the survey in this study. First, the questionnaire items were adapted and modified from

previous research studies (e.g., Genaux et al., 1995), and supplemental items were added to address some of the research questions in this study. Second, the survey was presented to a faculty member in the area of substance abuse, to survey development experts, and the dissertation committee, to determine the importance of the survey items, and other logistical aspects of the survey.

The reliability of an instrument is important to ensure the consistency of the outcome of what the instrument is measuring. The survey contained four sections. Cronbach's alpha was employed to determine the internal consistency reliability of the survey. For each section, the alpha coefficients were as follows: importance of being knowledgeable of substance abuse areas, 0.643 (*n*=2 items); current level of knowledge, 0.851 (*n*=6 items); teacher preparation coursework, 0.949 (*n*= 6 items); importance of receiving substance abuse information 0.958 (*n*=6 items). The overall reliability of the survey yielded an alpha coefficient of 0. 856 (*N*=20 items), and therefore was acceptable based on the criterion of 0.70 as a minimally acceptable value (Bobko, 2001; Litwin, 1995).

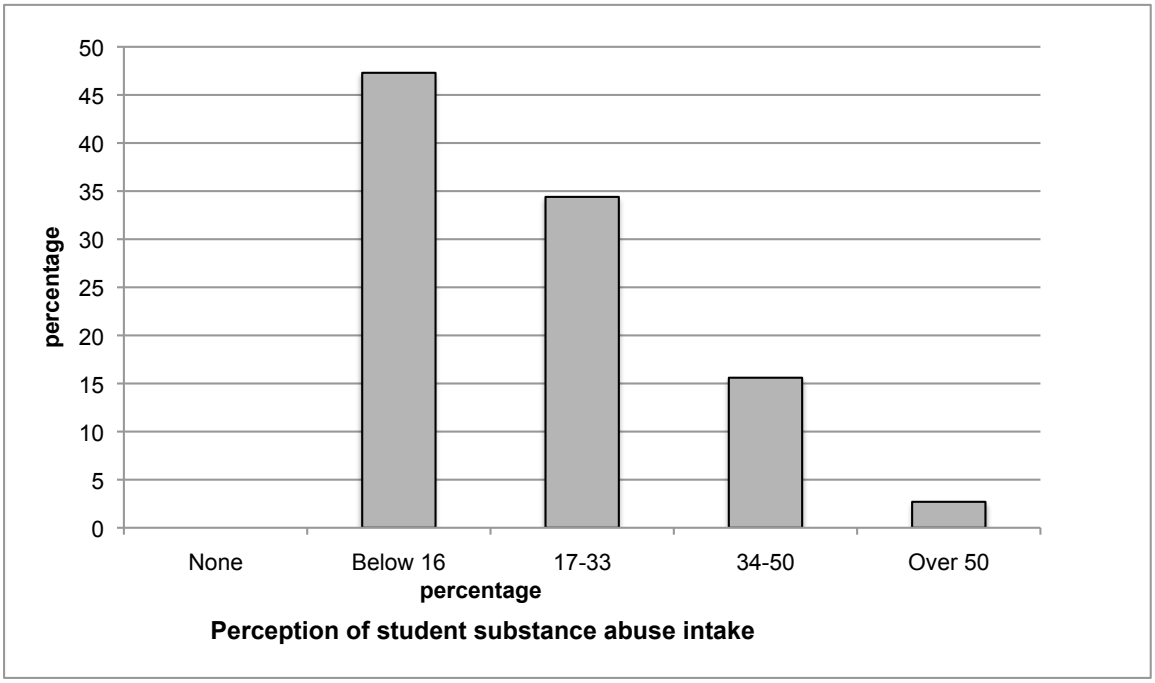
Descriptive Statistics of the Survey

Other than the first two survey questions, the remaining survey items specific to the research questions in this study, asked respondents to rate their level of knowledge on various substance abuse areas on a 5-point scale from 0 (*none*) to 4 (*a great deal*), as discussed below. The means, standard deviations, and frequencies of the responses to the individual items were computed. The overall results for each research question are presented below.

Research question 1. What are special education teachers' perceptions of substance abuse intake among their students: For this first research question the participants were asked two survey questions: "Do you think any of the special education students you instruct abuse substances?" and "What percentage of your special education students do you think abuse substances?" The first question asked respondents to answer a *yes* or *no*, while the second question asked respondents who had answered *yes* on question one to report what percent of the students they instructed abused substances. In the second question, there were five choices to select from, ranging from *none* to *over 50%,* with a sixteen point range between the five response options.

Descriptive statistics were run to obtain the total percentages and frequency counts of the participants' perceptions of substance abuse intake among the students they instruct. For the first question "Do you think any of the special education students you instruct abuse substances?" 58.1% of participants reported that the students they instructed abused substances. The respondents who answered *yes* to the first question, answered the second question, "What percentage of your special education students do you think abuse substances?" as follows: none (0%); below 16% (47.3%); 17-33% (34.4%); 34-50% (15.6%), and over 50% (2.7%) as shown in Figure 4.9 below.

Figure 4.9: Participants' perception of student substance abuse intake



The results show that, while 58.1% of participants perceived their students abused substances, the majority perceived only 16% of special education students were abusing substances. A chi-square test for independence was run to determine if there was a significant difference between the above response categories. The chi-square showed there was a significant difference ($p = < .05$), indicating the *below 16%* response category to have the highest percentage of participants who perceived their students were abusing substances. Thus, the participants' perceptions that only 16% of special education students were abusing substances did not match my hypothesis that 25-50% of these students are abusing substances.

Research question 2. What are special education teachers' perceptions of their own knowledge of different substance abuse areas? This research question corresponded to question four of the survey, which asked respondents to rate, on a five-point Likert-type rating scale (0=*none* to 4=*a great deal*), their level of knowledge on four substance abuse areas: types of substances frequently abused by students, physical/visible signs of substance abuse, effects of substance abuse on behavior, and effects of substance abuse on cognition.

Descriptive analysis was run to determine the percentages and frequency counts. Table 4.4 presents the percentages of how the participants ranked their perception of knowledge in the above four areas, including two additional areas.

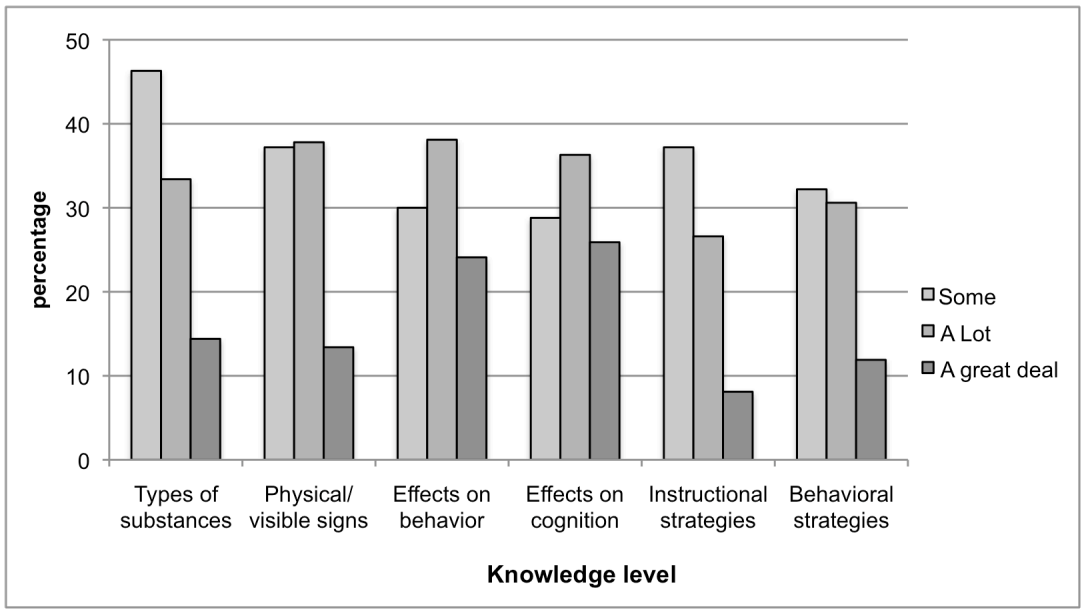
Table 4.4: Percentage (%) reflecting participants' current levels of knowledge in six substance abuse areas

Knowledge Area	**None n (%)**	**A little n (%)**	**Some n (%)**	**A lot n (%)**	**A great deal n (%)**
Types of substances frequently abused by students	6 (1.9)	13 (4.1)	148 (46.3)	107 (33.4)	46 (14.4)
Physical/visible signs of substance abuse	9 (2.8)	28 (8.8)	119 (37.2)	121 (37.8)	43 (13.4)
Effects of substances on behavior	4 (1.3)	21 (6.6)	96 (30.0)	122 (38.1)	77 (24.1)
Effects of substances on cognition	5 (1.6)	24 (7.5)	92 (28.8)	116 (36.3)	83 (25.9)
Effective classroom instructional strategies	33 (10.3)	57 (17.8)	119 (37.2)	85 (26.6)	26 (8.1)
Effective classroom behavioral strategies	32 (10)	49 (15.3)	103 (32.2)	98 (30.6)	38 (11.9)

Note: Total N = 320

Figure 4.10 below shows that in the four areas (types of substances frequently abused by students, to effects of substances on cognition), majority of the participants reported to have *some knowledge* or *a lot of knowledge* in each of these areas, when compared to the other response categories.

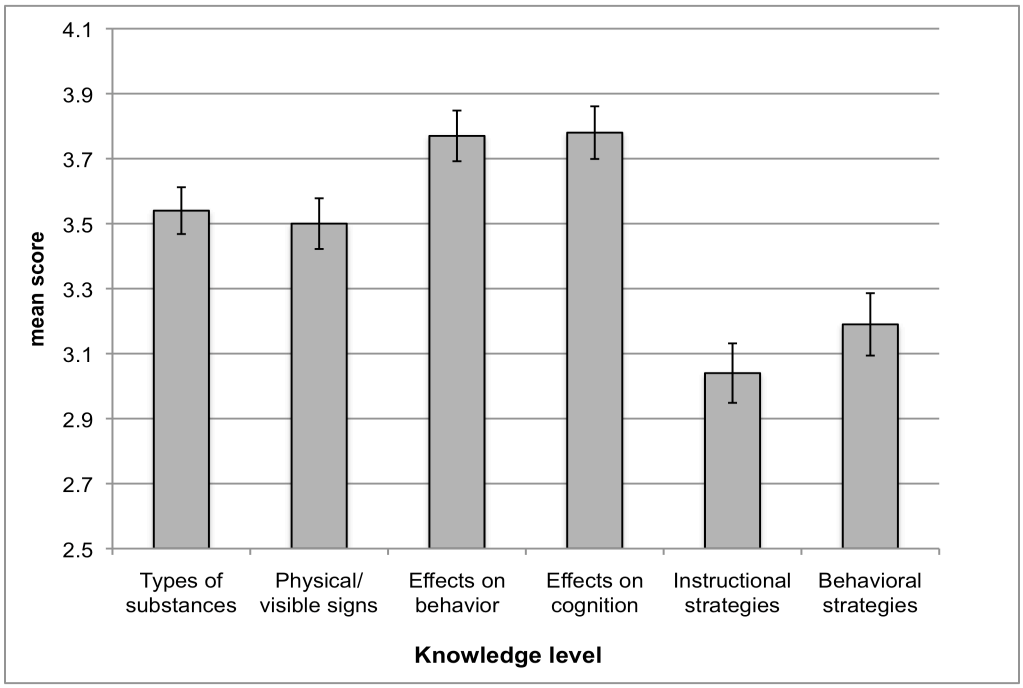
Figure 4.10: Participants' current levels of knowledge in six substance abuse areas



In *some knowledge* response category, the participants reported having the most knowledge in the types of substances frequently abused by students (46.3%), followed by the physical/visible signs of substance abuse (37.2%). In *a lot of knowledge* response category, participants reported having the most knowledge in the effects of substances on behavior (38.1%) closely followed by the physical/visible signs of substance abuse (37.8%). In these two response categories, the participants reported having the least knowledge in the area of effects of substances on cognition (28.8%) and instructional strategies (26.6%) respectively. Meanwhile, less than 30% of participants reported having *a great deal of knowledge* in any of the four areas. In this response category, participants reported having the highest knowledge in the area of effects of substances on cognition (25.9%) and the least knowledge in the physical/visible signs of substance abuse (13.4%).

The four areas (types of substances frequently abused by students, to effects of substances on cognition) had a mean lower that 4.0, and a mean score ranging between M=3.50 and M=3.78 (see Figure 4.11).

Figure 4.11: Participants' perceptions of level of knowledge in six substance abuse areas



Note: Error bars represent ± 1.5 standard error

Specifically, the participants reported to have the highest knowledge in the effects of substances on cognition (M= 3.78), very closely followed by the knowledge in the effects of substances on behavior (M= 3.77). Participants perceived having the least knowledge in the area of physical/visible signs of substance abuse (M= 3.50), and the types of substances frequently abused by students (M= 3.54) respectively. This result did not match my hypothesis which had predicted the highest mean would be reported in the

types of substances frequently abused by students, followed by physical/visible signs of substance abuse, with effects of substances on behavior, and effects of substances on cognition coming third and forth place respectively.

A one-way repeated measure ANOVA was used to determine any differences in the participants' perception of knowledge in the four areas (types of substances frequently abused by students to effects of substances on cognition). The Mauchly's test of Sphericity determined that there was a significant sphericity violation ($p = .000$) but this violation was not severe so Huynh-Feldt (.786) correction was used in the following analysis. The results depicted a significant difference in the participants' current level of knowledge among the four areas, $F(2.4, 752.5) = 22.8$, $p < .01$.

To determine which means in the four areas were significantly different and which ones were not, a post-hoc (Bonferroni) test was run. The results showed that the current level of the participants' perception of knowledge in the area of the effects of substances on behavior was statistically significant than knowledge in the areas of types of substances frequently abused by students, and the physical/visible signs of substance abuse, respectively ($p < .01$; $p < .01$). Similarly, the participants' perception of knowledge in the area of the effects of substances on cognition was statistically significant than their knowledge in the areas of types of substances frequently abused by students, and physical/visible signs of substance abuse, respectively ($p < .05$; $p < .05$).

Research question 3. What are special education teachers' perceptions of their classroom knowledge in addressing instructional and behavioral management issues of special education students abusing substances? This research question related to question

six of the survey, which asked respondents to rate, on a five-point Likert-type rating scale (0=*none* to 4=*a great deal*), their level of knowledge in providing effective classroom instructional and behavioral management strategies to support the academic performance of special education students who are abusing substances. Table 4.4 (p. 66) presents the descriptive percentages of how the participants ranked their perception of knowledge in these two areas. The frequency table shows that in the two areas, majority of the teachers reported to have *some knowledge* or *a lot of knowledge*: ranging from 26.6%- 37.2%. In *some knowledge* response category, the participants reported having more knowledge in classroom instructional strategies (37.2%) to support the academic performance of special education students who are abusing substances, than in the area of classroom behavior management strategies (32.2%).

However, in *a lot of knowledge* response category, participants reported having more knowledge in the area of classroom behavioral management strategies (30.6%) than in the area of effective instructional classroom strategies (26.6%). Less than 15% of participants reported having *a great deal of knowledge* in the two areas: classroom instructional strategies (8.1%), and classroom behavioral strategies (11.9%).

Meanwhile, below 20% (see Table 4.4, p.66) of the participants reported having *none* to *a little knowledge* in these two classroom strategies, which did not match my hypothesis that over 50% would report *none* or *little knowledge* in these two areas. The mean score for classroom instructional strategies was M=3.04, while the mean for classroom behavior management strategies was M=3.19 (see Figure 4.11, p. 68), implying participants had more knowledge in the latter area.

A one-way repeated measure ANOVA was used to determine any differences in the participants' perception of knowledge in the two areas. The results depicted a significant difference in the participants' current level of knowledge among the two areas, $F(1, 319) = 17.7$, $p < .01$.

Research question 4i. Are there differences in the teachers' perceptions of substance abuse knowledge and related classroom pedagogy skills across school levels? This research question focused on only participants who identified their principal school level as either kindergarten (K), elementary, middle/junior, or high school. In regard to the first school level, kindergarten participants were the most respondents (n=30; 9.4%) compared to elementary participants (n=2; 0.6%). Since elementary participants (n=2) were so few, they were dropped from this analysis. Table 4.5 presents the descriptive analysis of the participants' level of knowledge in each of the six areas of substance abuse across the three school levels.

Table 4.5: Percentage of participants' level of knowledge across school levels

Knowledge Area	**None n (%)**	**A little n (%)**	**Some n (%)**	**A lot n (%)**	**A great deal n (%)**	**Total N=209**
Types of substances frequently abused						
Kindergarten	2 (6.7)	1 (3.3)	15 (50.0)	9 (30.0)	3 (10.0)	30 (14.4)
Middle	2 (2.5)	6 (7.4)	40 (49.4)	23 (28.4)	10 (12.3)	81 (38.4)
High school	0 (0)	4 (4.1)	48 (49.0)	36 (36.7)	10 (10.2)	98 (46.4)
Total	***4 (1.9)***	***11(5.3)***	***103 (49.3)***	***68 (32.5)***	***23 (11.0)***	***209 (100)***
Physical/visible signs of S.A						
Kindergarten	2 (6.7)	1 (3.3)	11 (33.3)	14 (46.7)	3 (10.0)	30 (14.4)
Middle	5 (6.2)	8 (9.9)	29 (35.8)	33 (40.7)	6 (7.4)	81 (38.4)
High school	1 (1.0)	10 (10.2)	43 (43.9)	31 (31.6)	13 (13.3)	98 (46.4)
Total	***8 (3.8)***	***19 (9.1)***	***82 (39.2)***	***78 (37.3)***	***22 (10.5)***	***209 (100)***
Effects of substances on behavior						
Kindergarten	2 (6.7)	1 (3.3)	9 (30.0)	8 (26.7)	10 (33.3)	30 (14.4)
Middle	1 (1.2)	7 (8.6)	21 (25.9)	32 (39.5)	20 (24.7)	81 (38.4)
High school	0 (0)	9 (9.2)	37 (37.8)	35 (35.7)	17 (17.3)	98 (46.4)
Total	***3 (1.4)***	***17 (8.1)***	***67 (32.1)***	***75 (35.9)***	***47 (22.5)***	***209 (100)***
Effects of substances on cognition						
Kindergarten	2 (6.7)	2 (6.7)	9 (30.0)	6 (20.0)	11 (36.7)	30 (14.4)
Middle	2 (2.5)	7 (8.6)	23 (28.4)	27 (33.3)	22 (27.2)	81 (38.4)
High school	0 (0)	11 (11.2)	28 (28.6)	41 (41.8)	18 (18.4)	98 (46.4)
Total	***4 (1.9)***	***20 (9.6)***	***60 (28.7)***	***74 (35.4)***	***51 (24.4)***	***209 (100)***

Table 4.5 (cont.)

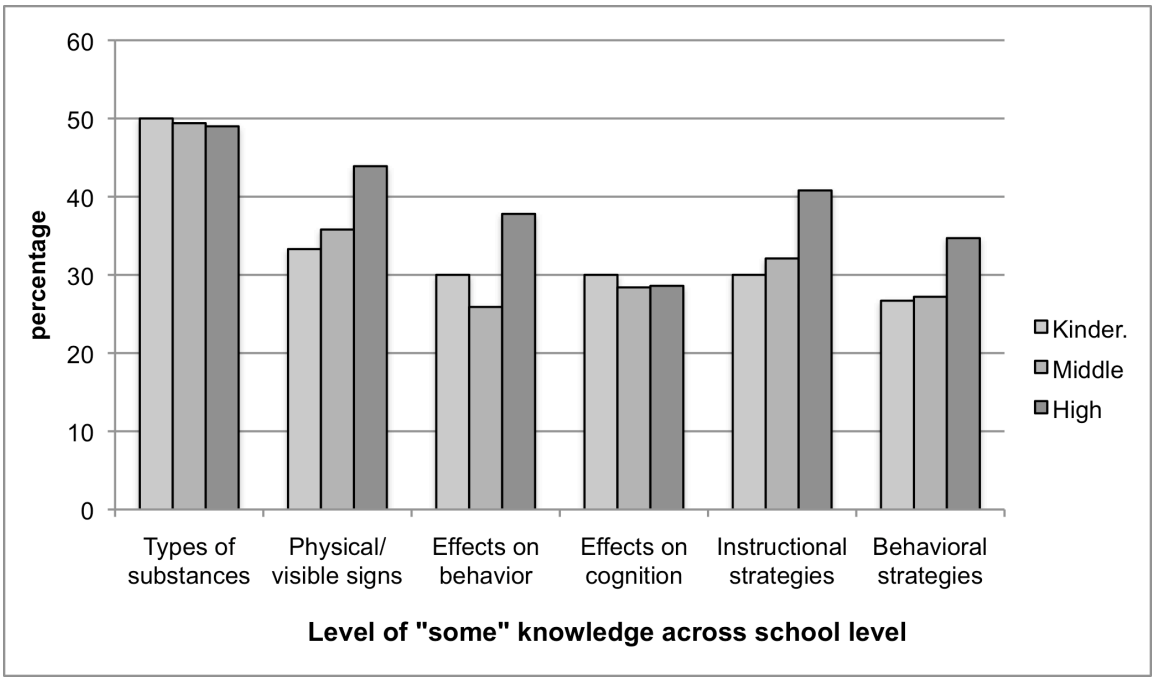
Classroom instructional strategies						
Kindergarten	5 (16.7)	4 (13.3)	9 (30.0)	7 (23.3)	5 (16.7)	30 (14.4)
Middle	13 (16.0)	18 (22.2)	26 (32.1)	15 (18.5)	9 (11.1)	81 (38.4)
High school	8 (8.2)	19 (19.4)	40 (40.8)	25 (25.5)	6 (6.1)	98 (46.4)
Total	***26 (12.4)***	***41 (19.6)***	***75 (35.9)***	***47 (22.5)***	***20 (9.6)***	***209 (100)***
Classroom behavioral strategies						
Kindergarten	4 (13.3)	6 (20.0)	8 (26.7)	4 (13.3)	8 (26.7)	30 (14.4)
Middle	12 (14.8)	17 (21.0)	22 (27.2)	21 (25.9)	9 (11.1)	81 (38.4)
High school	10 (10.2)	14 (14.3)	34 (34.7)	30 (30.6)	10 (10.2)	98 (46.4)
Total	***26 (12.4)***	***37 (17.7)***	***64 (30.6)***	***55 (26.3)***	***27 (12.9)***	***209 (100)***

In the six substance abuse areas, participants across the three school levels reported having the least knowledge (*none*) in classroom strategies (8.2%-16.7%) as shown in Table 4.5, while the highest level of knowledge was reported in *some knowledge* and *a lot of knowledge* response categories. Generally, high school participants reported the highest knowledge in these two categories, followed by kindergarten participants, with middle school participants reporting the least level of knowledge.

Specifically, in *some knowledge* response category (see Figure 4.12), high school participants reported having the highest knowledge in four areas: physical/visible signs of substance abuse (43.9%), effects of substances on behavior (37.8%), classroom instructional strategies (40.8%), and classroom behavioral strategies (34.7%). However,

in the area of the effects of behavior on cognition, the percentage difference was very slight (less than 1.5%) between high school participants and their counterparts. Kindergarten participants reported having the highest knowledge in the types of substances frequently abused by students (50.0%). However, when compared to their counterparts, the percentage difference was minimal (less than .7%).

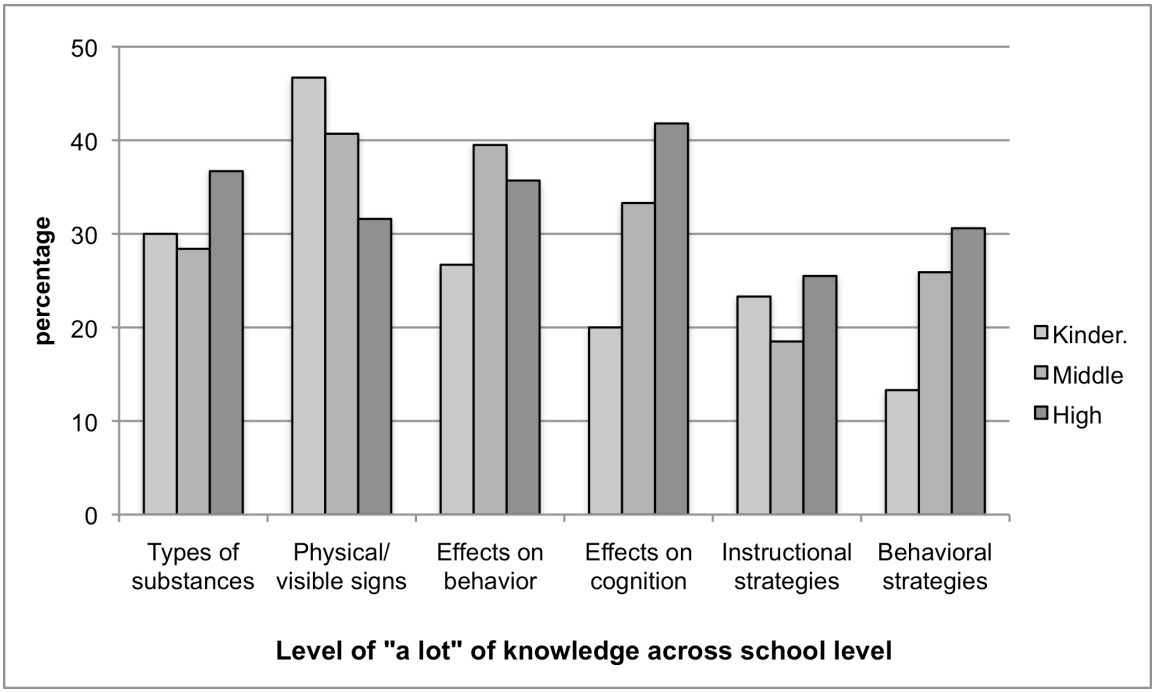
Figure 4.12: Participants' level of "some" knowledge across school levels



Similarly, in the *a lot of knowledge* response category (see Figure 4.13), high school participants reported having the highest knowledge in four areas: types of substances frequently abused by students (36.7%), effects of substances on cognition (41.8%), classroom instructional strategies (25.5%) and classroom behavioral strategies

(30.6%). Kindergarten participants reported the highest knowledge in the physical/visible signs of substance abuse (46.7%), while middle school participants reported the highest knowledge in effects of substances on behavior (39.5%).

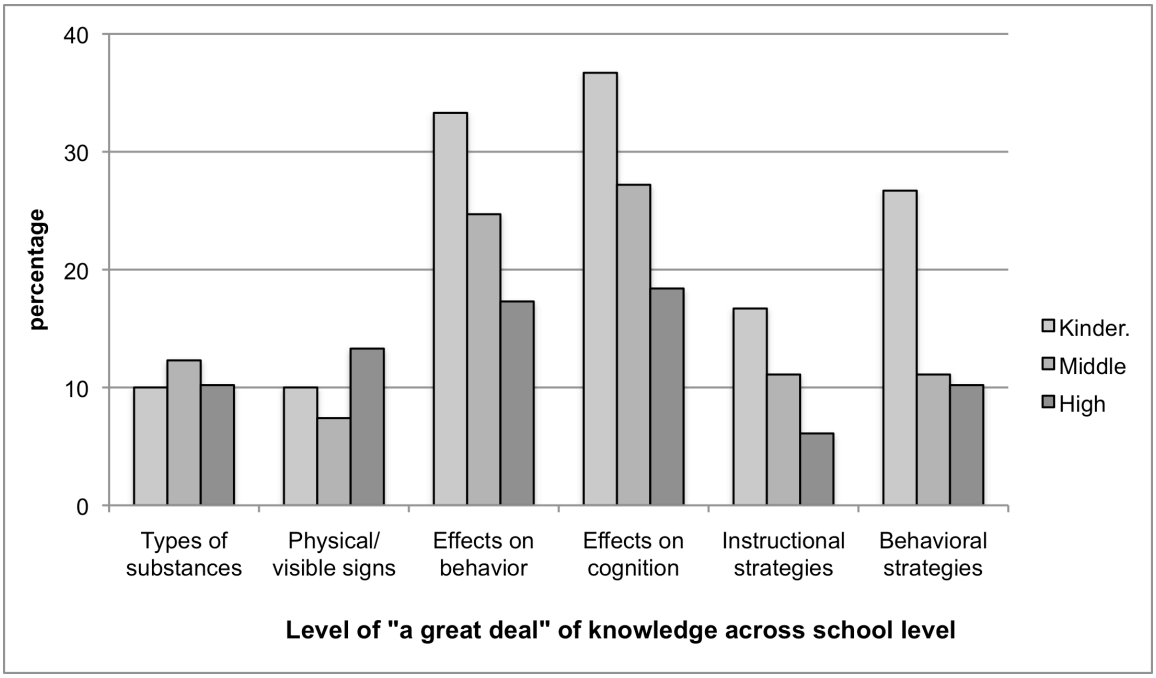
Figure 4.13: Participants' level of "a lot" of knowledge across school levels



Surprisingly, in *a great deal of knowledge* response category (see Figure 4.14), kindergarten participants reported the highest level of knowledge in four areas: effects of substances on behavior (33.3%), effects of substances on cognition (36.7%), classroom instructional strategies (16.7%), and classroom behavioral strategies (26.7%). Middle school participants reported the highest knowledge in types of substances frequently abused by students (12.3%), while high school teachers reported the highest knowledge

in physical/visible signs of substance abuse (13.3%). Thus, kindergarten participants reported the highest knowledge in this category.

Figure 4.14: Participants' level of "a great deal" of knowledge across school levels

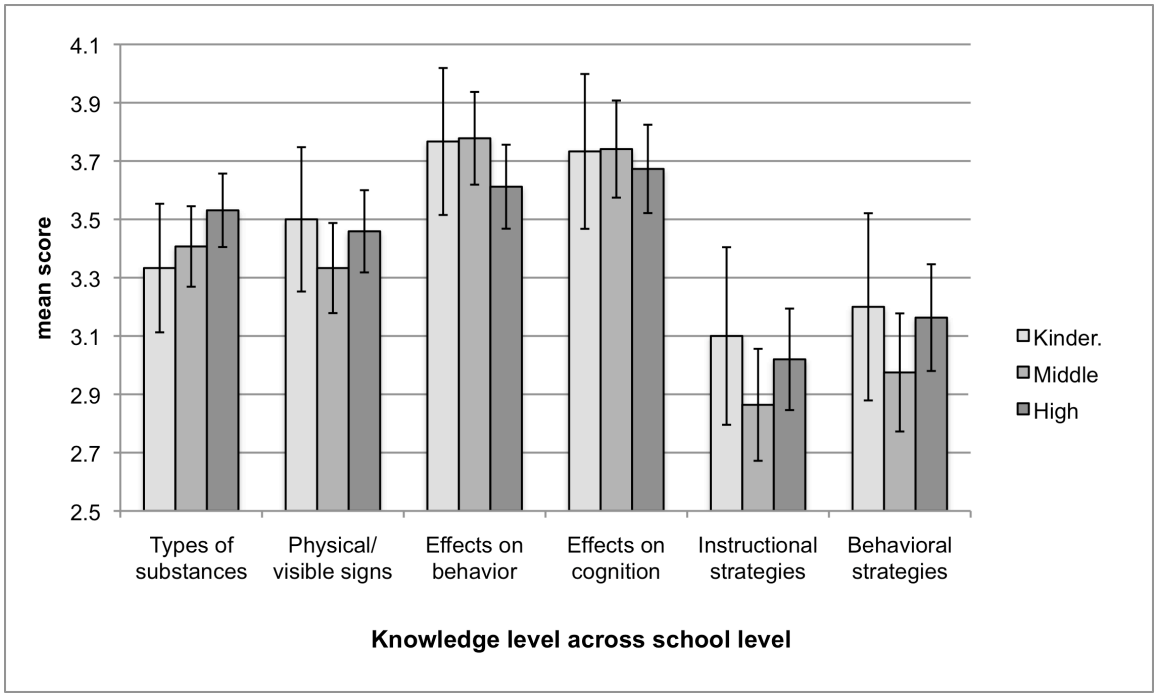


The means of the six dependent variables were lower than 4.0 with a mean score ranging between M= 2.86 to M=3.78 (see Figure 4.15). In the six areas, kindergarten participants reported having slightly higher knowledge in three areas: physical/visible signs of substance abuse (M=3.50), classroom instructional strategies (M=3.10) and classroom behavioral strategies (M=3.20) than their counterparts. However, in two of these areas, the mean scores of kindergarten school participants was very close to that of high school participants: physical/visible signs of substance abuse (M=3.46), and

classroom behavioral strategies (M=3.16). High school participants reported slightly higher knowledge in types of substances frequently abused by students (M= 3.53). Middle school participants reported the lowest level of knowledge in three areas: physical/visible signs of substance abuse (M=3.33), classroom instructional strategies (M=2.86), and classroom behavioral strategies (M=2.98) respectively.

Generally, these results differed with my hypothesis that high school participants would report the highest level of knowledge in most of the areas, followed by middle school participants. In contrast, high school participants reported having the highest knowledge in only one of the six areas (types of substances frequently abused by students), while middle school participants reported having the highest knowledge in two areas: effects of substances on behavior, and effects of substances on cognition.

Figure 4.15: Participants' mean scores across school levels



Note: Error bars report ± 1.5 standard error

An A X B X C multivariate analyses of variance (MANOVA) was used to determine any differences across the three school levels in the participants' perceptions of knowledge in the six substance abuse areas. The results depicted no significant difference in the participants' current level of knowledge among the six nominal variables, across the school levels $F(12, 402) = 1.171$, $p > .05$. An overall univariate test for each of the six dependent variables also revealed no significant differences (all p's >.05), which did not match with my hypothesis that significant differences would be found in two out of the six areas. Post hoc results also revealed no pairwise significant differences (p>.05) in the participants' level of knowledge in the six areas, across the school levels.

Research question 4ii. Are there differences in the teachers' perceptions of substance abuse knowledge and related classroom pedagogy skills across school locations? This research question focused on three school locations: urban, suburban, and rural. Table 4.6 presents the descriptive analysis of the participants' level of knowledge in each of the six areas of substance abuse across the three school locations.

Table 4.6: Participants' level of knowledge across school locations

Knowledge Area	**None n (%)**	**A little n (%)**	**Some n (%)**	**A lot n (%)**	**A great deal n (%)**	**Total N= 320**
Types of substances frequently abused by students						
Urban	3 (3.0)	5 (5.1)	46 (46.5)	28 (28.3)	17 (17.2)	99 (30.9)
Suburban	2 (1.5)	3 (2.3)	53 (40.8)	50 (38.5)	22 (16.9)	130 (40.6)
Rural	1 (1.1)	5 (5.5)	49 (53.8)	29 (31.9)	7 (7.7)	91 (28.4)
Total	***6 (1.9)***	***13(4.1)***	***148 (46.3)***	***107 (33.4)***	***46 (14.4)***	***320 (100)***
Physical/visible signs of substance abuse						
Urban	4 (4.0)	11 (11.1)	34 (34.3)	32 (32.3)	18 (18.2)	99 (30.9)
Suburban	3 (2.3)	7 (5.4)	48 (36.9)	52 (40.0)	20 (15.4)	130 (40.6)
Rural	2 (2.2)	10 (11.0)	37 (40.7)	37 (40.7)	5 (5.5)	91 (28.4)
Total	***9 (2.8)***	***28 (8.8)***	***119 (37.2)***	***121 (37.8)***	***43 (13.4)***	***320 (100)***
Effects of substances on behavior						
Urban	1 (1.0)	9 (9.1)	29 (29.3)	32 (32.3)	28 (28.3)	99 (30.9)
Suburban	2 (1.5)	5 (3.8)	39 (30.0)	54 (41.5)	30 (23.1)	130 (40.6)
Rural	1 (1.1)	7 (7.7)	28 (30.8)	36 (39.6)	19 (20.9)	91 (28.4)
Total	***4 (1.3)***	***21 (6.6)***	***96 (30.0)***	***122 (38.1)***	***77 (24.1)***	***320 (100)***

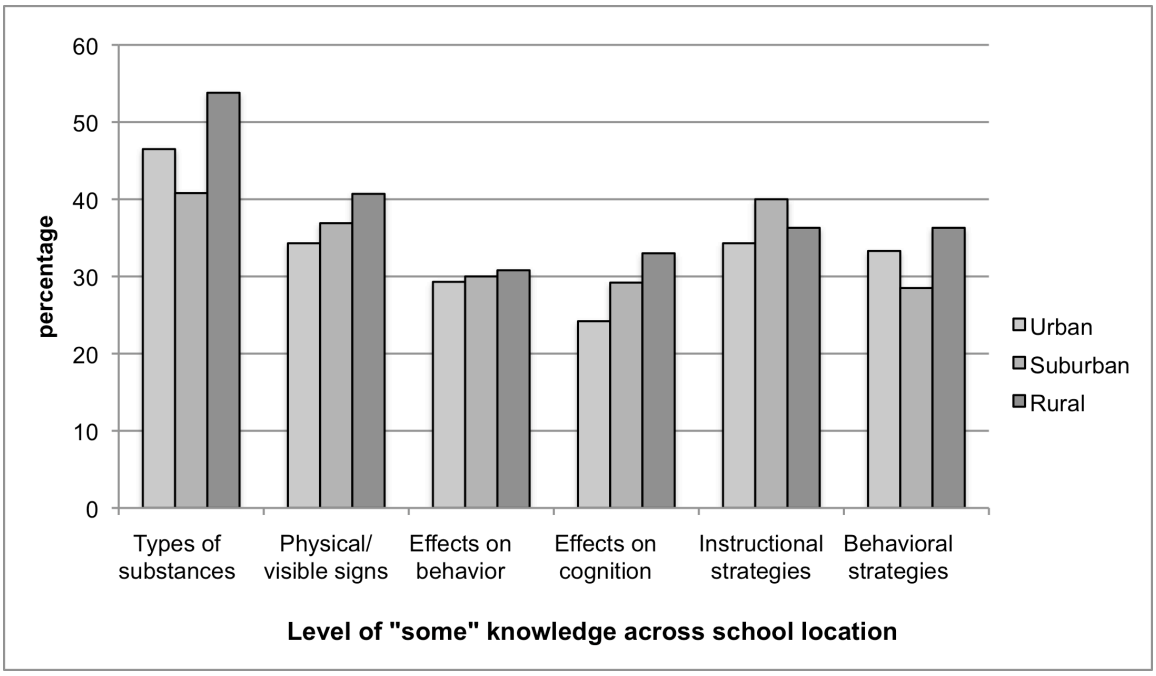
Table 4.6 (cont.)

Effects of substances on cognition						
Urban	1 (1.0)	9 (9.1)	24 (24.2)	34 (34.3)	31 (31.3)	99 (30.9)
Suburban	2 (1.5)	7 (5.4)	38 (29.2)	53 (40.8)	30 (23.1)	130 (40.6)
Rural	2 (2.2)	8 (8.8)	30 (33.0)	29 (31.9)	22 (24.2)	91 (28.4)
Total	***5 (1.6)***	***24 (7.5)***	***92 (28.8)***	***116 (36.3)***	***83 (25.9)***	***320 (100)***
Classroom instructional strategies						
Urban	7 (7.1)	17 (17.2)	34 (34.3)	28 (28.3)	13 (13.1)	99 (30.9)
Suburban	14 (10.8)	17 (13.1)	52 (40.0)	39 (30.0)	8 (6.2)	130 (40.6)
Rural	12 (13.2)	23 (25.3)	33 (36.3)	18 (19.8)	5 (5.5)	91 (28.4)
Total	***33 (10.3)***	***57 (17.8)***	***119 (37.2)***	***85 (26.6)***	***26 (8.1)***	***320 (100)***
Classroom behavioral strategies						
Urban	7 (7.1)	15 (15.2)	33 (33.3)	29 (29.3)	15 (15.2)	99 (30.9)
Suburban	17 (13.1)	14 (10.8)	37 (28.5)	48 (36.9)	14 (10.8)	130 (40.6)
Rural	8 (8.8)	20 (22.0)	33 (36.3)	21 (23.1)	9 (9.9)	91 (28.4)
Total	***32 (10.0)***	***49 (15.3)***	***103 (32.2)***	***98 (30.6)***	***38 (11.9)***	***320 (100)***

Across the school locations, the participants reported having the highest knowledge in *some knowledge* and *a lot of knowledge* response categories in the six substance abuse areas. In *some knowledge* response category (see Figure 4.16), rural participants reported having the highest knowledge in five areas: types of substances frequently abused by students (53.8%), physical/visible signs of substance abuse (40.7%), effects of substances on behavior (30.8%), effects of substances on cognition (33.0%), and classroom behavioral strategies (36.3%). In the area of the effects of substances on behavior, the percentage difference was very slight (less than .8%) compared to their

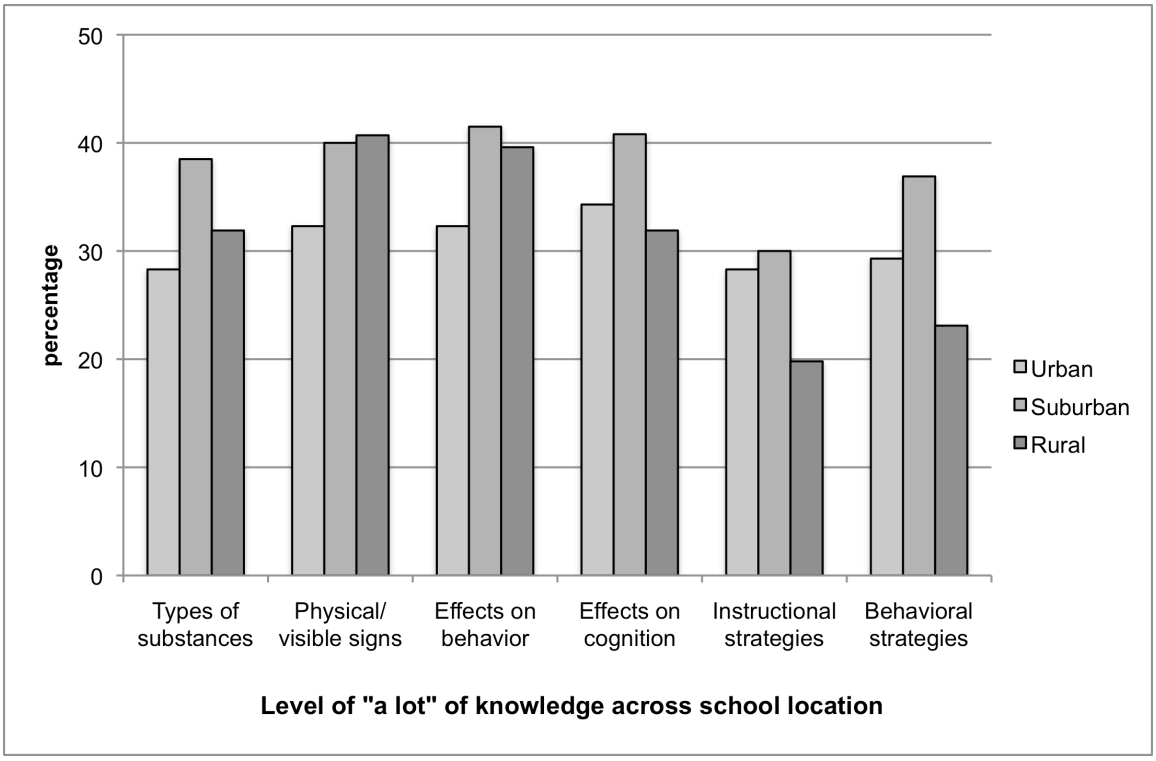
counterparts. Suburban participants reported having the highest knowledge in classroom instructional strategies (40.0%).

F*igure 4.16: Participants' level of "some" knowledge across school locations*



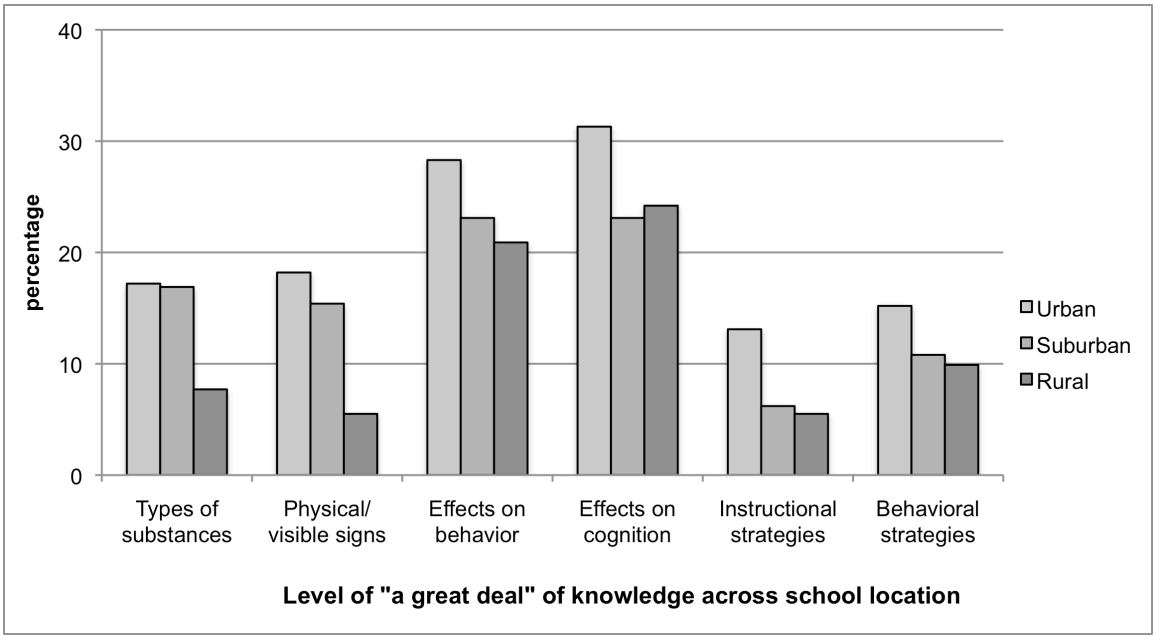
However, in *a lot of knowledge* response category (see Figure 4.17), suburban participants reported having the highest knowledge in five areas: types of substances frequently abused by students (38.5%), effects of substances on behavior (41.5%), effects of substances on cognition (40.8%), classroom instructional strategies (30.0%) and classroom behavioral strategies (36.9%). Rural participants reported the highest knowledge in physical/visible signs of substance abuse (40.7%), a very slight difference (less than .7%) from suburban participants.

Figure 4.17: Participants' level of "a lot" of knowledge across school locations



In *a great deal of knowledge* response category (see Figure 4.18), the difference in the level of knowledge reported by urban and suburban participants was very slight (.3% difference) in the area of the types of substances frequently abused by students. In the remaining five areas, urban participants reported much higher knowledge than their counterparts, while rural participants reported the least knowledge in five areas. In this response category, participants reported having the least knowledge in classroom strategies (5.5%-15.2%).

Figure 4.18: Participants' level of "a great deal" of knowledge across school locations

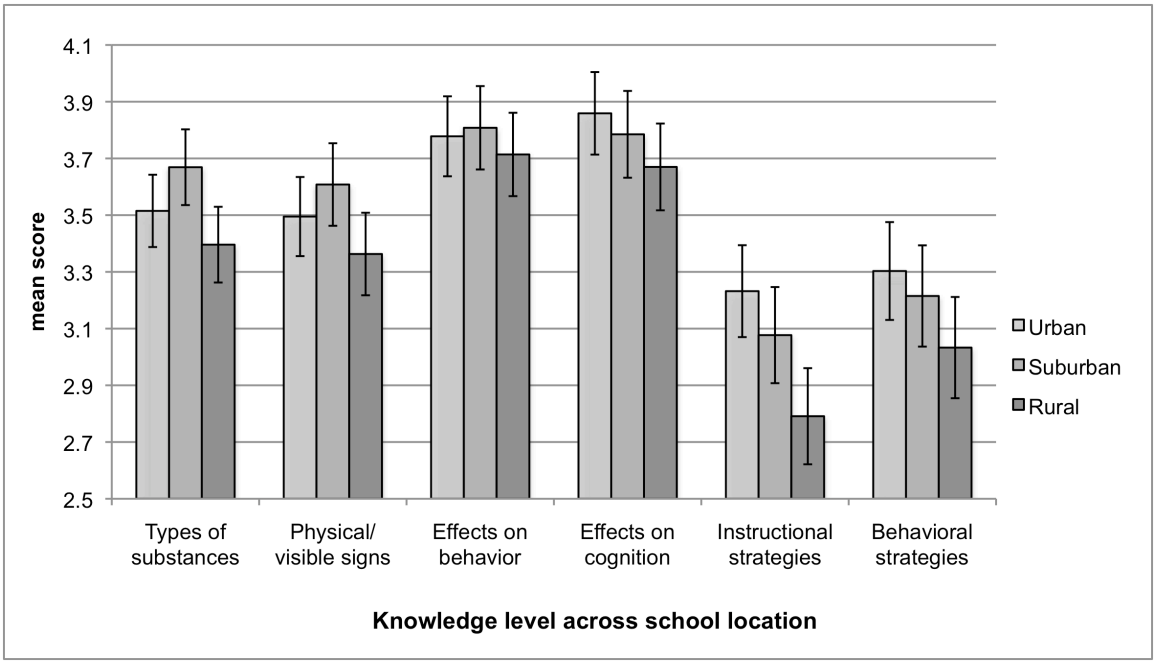


The means of the six dependent variables were lower than 4.0 with a mean score ranging between M= 2.79 to M=3.86 as shown in Figure 4.19. In three of the six areas of substance abuse, participants who teach in suburban schools reported having slightly higher knowledge, than their counterparts: types of substances frequently abused by students (M=3.67); physical/visible signs of substance abuse (M=3.61); and the effects of substances on behavior (M=3.81), which disqualified my earlier hypothesis that urban school participants would report higher knowledge in these substance abuse areas.

On the other hand, urban school participants reported higher knowledge in the areas of effects of substances on cognition (M=3.86), classroom instructional strategies (M=3.23), and in classroom behavioral strategies (M=3.30) to support the academic

performance of special education students who are abusing substances. Rural school participants reported the least level of knowledge in all the six substance abuse areas.

Figure 4.19: Participants' mean scores across school locations



Note: Error bars report ± 1.5 standard error

An A X B X C multivariate analyses of variance (MANOVA) was used to determine any differences in the participants' perceptions of knowledge in the six substance abuse areas, across the three school locations. The results depicted a significant difference in the teachers' current level of knowledge among the six nominal variables, $F(12, 624) = 1.578$, $p < .01$, which differed with my hypothesis that there would be no significant differences.

An overall univariate test for each dependent variable was run on the three school locations. The results depicted the dependent variable on participants' perceptions of knowledge in classroom instructional strategies was significant F (2, 317) = 4.078, p= .018. However, the remaining five dependent variables on participants' perceptions of knowledge were not significant (all p's >.05).

To determine which means were significantly different and which ones were not, a post-hoc (Bonferroni) test was run. The results only showed a pairwise significant difference (p=. 015) for the dependent variable of classroom instructional strategies to support the academic performance of special education students abusing substances, between participants who teach in the urban setting, and participants who teach in the rural setting.

Research question 4iii. Are there differences in the teachers' perceptions of substance abuse knowledge and related classroom pedagogy skills across teacher disability assignment? This research question focused on participants teaching students with learning disabilities [LD] (N=193; 65.4%), behavior/emotional disorders [BD] (N=45; 15.3%) and mild mental retardation [MR] (N= 57; 19.3%). Table 4.7 presents descriptive analysis of the participants' perceptions of knowledge across these three teacher disability assignments.

Table 4.7: Participants' perceptions of knowledge across teacher disability assignment

Knowledge Area	**None n (%)**	**A little n (%)**	**Some n (%)**	**A lot n (%)**	**A great deal n (%)**	**Total N= 295**
Types of substances frequently abused by students						
*LD	2 (1.0)	7 (3.6)	102 (52.8)	61 (31.6)	21 (10.9)	193 (65.4)
*BD	1 (2.2)	0 (0)	14 (31.1)	17 (37.8)	13 (28.9)	45 (15.3)
*MR	2 (3.5)	4 (7.0)	21 (36.8)	22 (38.6)	8 (14.0)	57 (19.3)
Total	***5 (1.7)***	***11(3.7)***	***137 (46.4)***	***100 (33.9)***	***42 (14.2)***	***295 (100)***
Physical/visible signs of substance abuse						
LD	3 (1.6)	17 (8.8)	83 (43.0)	68 (35.2)	22 (11.4)	193 (65.4)
BD	3 (6.7)	2 (4.4)	8 (17.8)	22 (48.9)	10 (22.2)	45 (15.3)
MR	2 (3.5)	9 (15.8)	17 (29.8)	19 (33.3)	10 (17.5)	57 (19.3)
Total	***8 (2.7)***	***28 (9.5)***	***108 (36.6)***	***109 (36.9)***	***42 (14.2)***	***295 (100)***
Effects of substances on behavior						
LD	1 (0.5)	19 (9.8)	61 (31.6)	72 (37.3)	40.0 (20.7)	193 (65.4)
BD	0 (0)	0 (0)	8 (17.8)	20 (44.4)	17 (37.8)	45 (15.3)
MR	2 (3.5)	2 (3.5)	20 (35.1)	18 (31.6)	15 (26.3)	57 (19.3)
Total	***3 (1.0)***	***21 (7.1)***	***89 (30.2)***	***110 (37.3)***	***72 (24.4)***	***295 (100)***
Effects of substances on cognition						
LD	2 (1.0)	16 (8.3)	67 (34.7)	64 (33.2)	44 (22.8)	193 (65.4)
BD	0 (0)	1 (2.)	9 (20.0)	20 (44.4)	15 (33.3)	45 (15.3)
MR	2 (3.5)	6 (10.5)	9 (15.8)	23 (40.4)	17 (29.8)	57 (19.3)
Total	***4 (1.4)***	***23 (7.8)***	***85 (28.8)***	***107 (36.3)***	***76 (25.8)***	***295 (100)***

Table 4.7 (cont.)

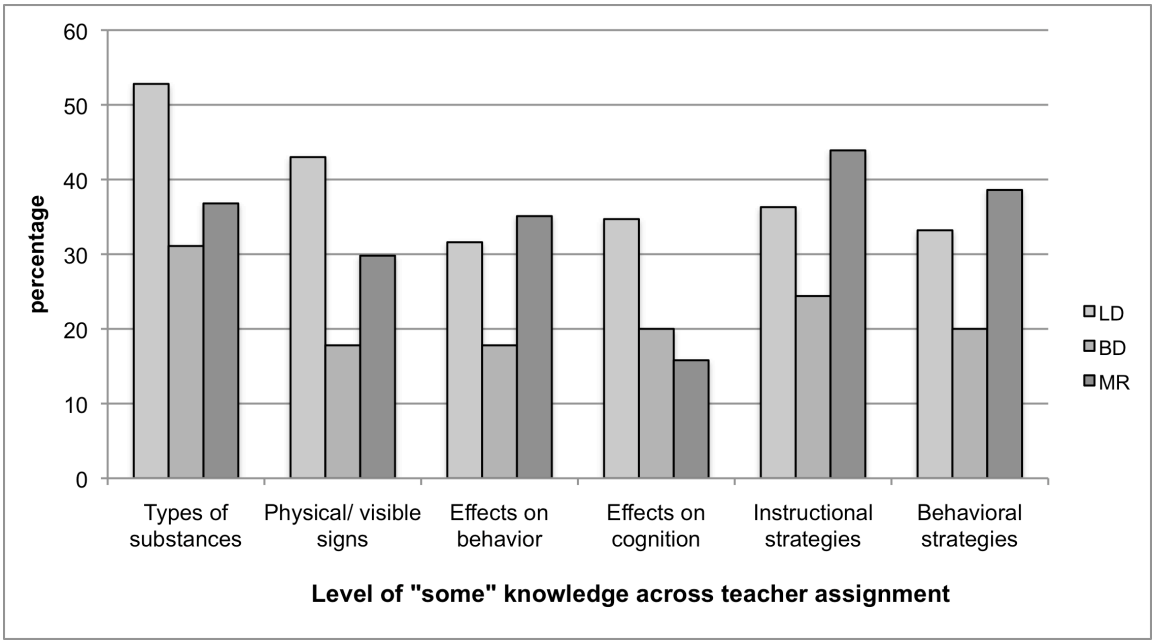
Classroom instructional strategies						
LD	22 (11.4)	40 (20.7)	70 (36.3)	46 (23.8)	15 (7.8)	193 (65.4)
BD	1 (2.2)	6 (13.3)	11 (24.4)	19 (42.2)	8 (17.8)	45 (15.3)
MR	6 (10.5)	9 (15.8)	25 (43.9)	15 (26.3)	2 (3.5)	57 (19.3)
Total	***29 (9.8)***	***55 (18.6)***	***106 (35.9)***	***80 (27.1)***	***25 (8.5)***	***295 (100)***
Classroom behavioral strategies						
LD	23 (11.9)	34 (17.6)	64 (33.2)	52 (26.9)	20 (10.4)	193 (65.4)
BD	0 (0)	3 (6.7)	9 (20.0)	20 (44.4)	13 (28.9)	45 (15.3)
MR	7 (12.3)	8 (14.0)	22 (38.6)	15 (26.3)	5 (8.8)	57 (19.3)
Total	***30 (10.2)***	***45 (15.3)***	***95 (32.2)***	***87 (29.5)***	***38 (12.9)***	***295 (100)***

*Note: LD- learning disabilities; BD- behavioral disorders; MR- mental retardation

Participants across these three teacher disability assignments reported the highest percentages of knowledge in *some knowledge* and *a lot of knowledge* response categories in the six substance abuse areas. In *some knowledge* response category (see Figure 4.20) participants who teach students diagnosed with LD reported the highest knowledge in three areas: types of substances frequently abused by students (52.8%), physical/visible signs of substance abuse (43.0%), and effects of substances on cognition (34.7%). Participants who teach students diagnosed with MR reported the highest knowledge in three areas: effects of substances on behavior (35.1%), classroom instructional strategies (43.9%) and classroom behavioral strategies (38.6%). In this response category,

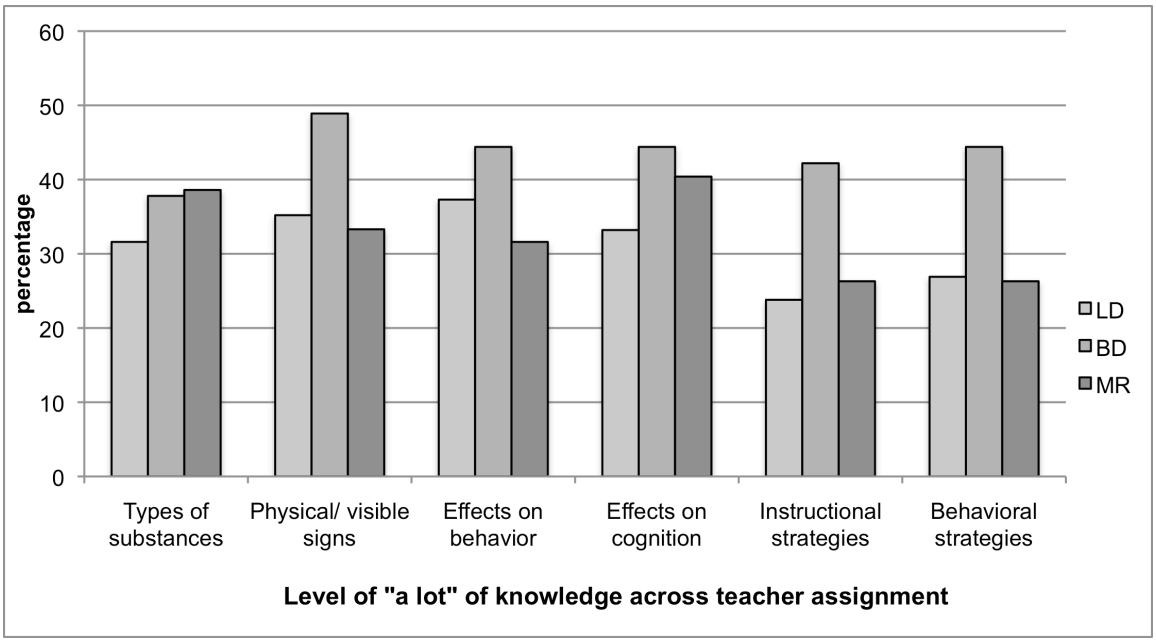
participants who teach students with BD did not report the highest knowledge in any of the six areas.

Figure 4.20: Participants' level of "some" knowledge across teacher disability assignment



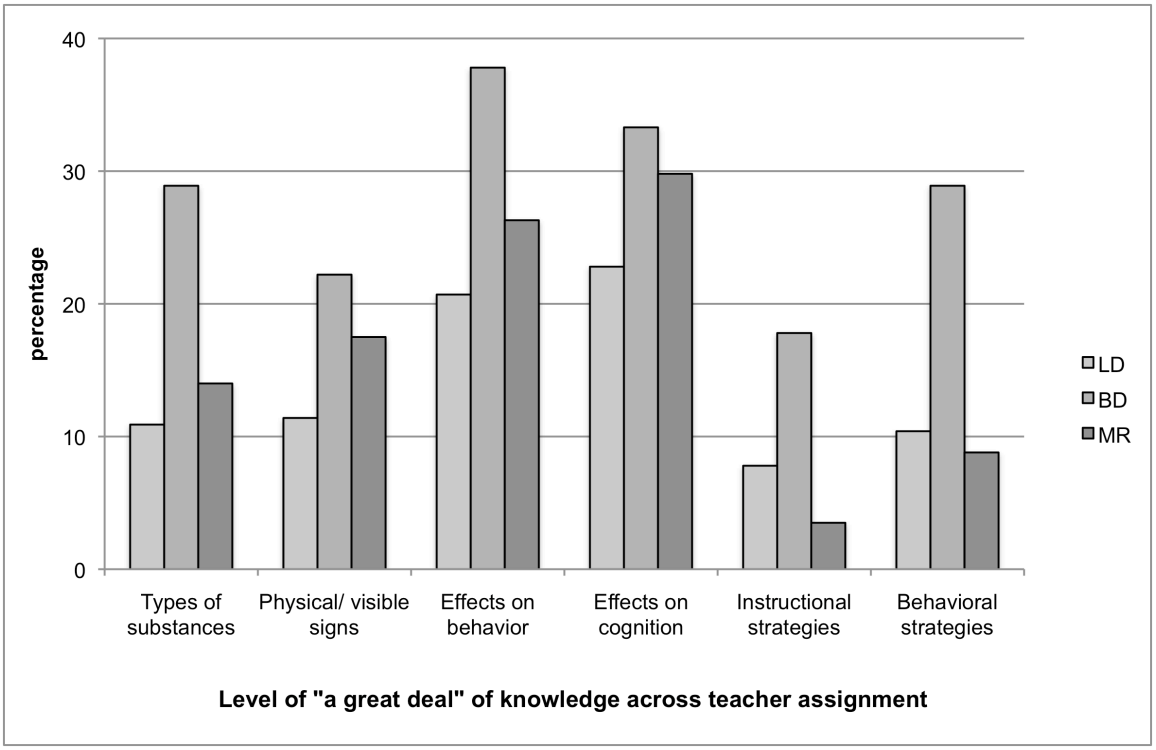
In *a lot of knowledge* response category (see Figure 4.21), participants who teach students with BD reported the highest knowledge in five areas as follows: physical/visible signs of substance abuse (48.9%), effects of substances on behavior (44.4%), effects of substances on cognition (44.4%), classroom instructional strategies (42.2%), and classroom behavioral strategies (44.4%). Participants who teach students with MR reported the highest knowledge in the area of types of substances frequently abused by students (38.6%). In this response category, participants who teach students with LD did not report the highest knowledge in any of the six areas.

Figure 4.21: Participants' level of "a lot" of knowledge across teacher disability assignment



Meanwhile, in *a great deal of knowledge* response category, participants who teach students with BD reported the highest knowledge in all the six areas (see Figure 4.22), although the percentages were still low (17.8%-37.8%).

Figure 4.22: Participants' level of "a great deal" of knowledge across teacher disability assignment

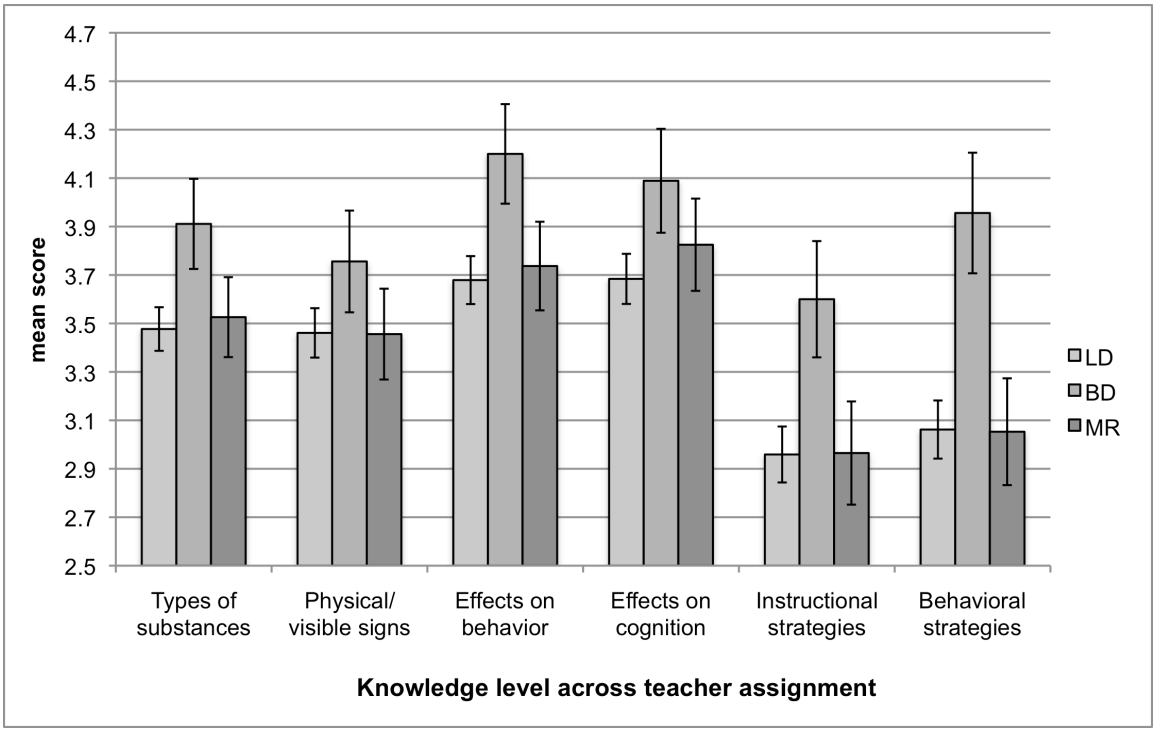


The means of the six dependent variables were lower than 5.0 with a mean score ranging between M= 2.96 to M=4.20 (see Figure 4.23). Participants who teach students diagnosed with BD reported having higher knowledge in all the six areas with mean scores between M= 3.60 (classroom instructional strategies) to M= 4.20 (effects of substances on behavior) than their counterparts. This result nullified my hypothesis that these participants would report higher knowledge in only three areas (types of substances frequently abused by students, physical signs of substance abuse, and effects of substance abuse on behavior), compared to their counterparts. Participants who teach students

diagnosed with LD reported the same or minimally higher knowledge than participants who teach students diagnosed with MR in the areas of physical/visible signs of substance abuse (M= 3.46 vs. M=3.46), classroom instructional strategies (M= 2.97 vs. M=2.96), and classroom behavioral strategies (M= 3.06 vs. M=3.05).

However, participants who teach students diagnosed with MR reported slightly higher knowledge than participants who teach students diagnosed with LD in three areas: types of substances frequently abused by students (M= 3.53 vs. M=3.48); effects of substances on behavior (M= 3.74 vs. M=3.68); and effects of substances on cognition (M= 3.83 vs. M=3.68). This result differed with my hypothesis that participants who teach students with MR would report the least knowledge in the types of substances frequently abused by students, and in the effects of substance abuse on behavior.

Figure 4.23: Participants' mean scores across teacher disability assignment



Note: Error bars report ± 1.5 standard error

An A X B X C multivariate analyses of variance (MANOVA) was used to determine any differences in participants' perceptions of knowledge in the six substance abuse areas across the three teacher categories. The results depicted a significant difference in these participants' current level of knowledge among the six nominal variables, F (12, 574) =2.675, p <. 01.

An overall univariate test for each dependent variable was run on the three teacher categories. The results indicated the following five dependent variables were significant: types of substances frequently abused by students F (2, 292)= 5.013, p= .007; effects of substances on behavior, F (2, 292)= 5.921, p= .003; effects of substance in cognition F (2,

292)= 3.368, p= .036; classroom instructional strategies F (2, 292)= 6.821, p= .001; and classroom behavioral strategies to support the academic performance of special education students who are abusing substances F (2, 292)= 12.337, p= .000. However, the univariate test for the dependent variable of physical/visible signs of substance abuse was not significant, F (2, 292)= 1.883, p= .154.

To determine which means were significantly different and which ones were not, a post-hoc (Bonferroni) test was run. The results showed a pairwise significant difference between participants who teach students with LD and participants who teach students with BD for the following dependent variables: types of substances frequently abused by students (p=. 005); the effects of substance abuse on behavior (p=. 002); the effects of substances on cognition (p=. 033); classroom instructional strategies (p=. 001); and classroom behavioral strategies to support the academic performance of special education students abusing substances (p=.000). Pairwise significant differences were also noted between participants who teach students with BD, and participants who teach students with MR for the following dependent variables: the effects of substances on behavior (p=. 036); classroom instructional strategies (p=. 009); and classroom behavioral strategies to support the academic performance of special education students abusing substances (p=. 000). These results differed with my hypothesis that they would be no significant differences reported across the three participant categories in the areas of cognition, classroom instructional strategies, and classroom behavioral strategies.

CHAPTER 5

DISCUSSION

Discussion and Implications

The purpose of this study was to examine special educators' perceptions of knowledge in substance abuse areas and related classroom pedagogy. Besides this primary purpose, this research study had three other objectives: (a) to update the decade old studies related to substance abuse and special education, (b) improve the quality of the methodology of the previous studies, and (c) engage a large number of teachers as participants in the study. Each of these aims was accomplished in some way. For instance, to improve the methodology, the sample was randomly selected, and participants were invited to respond to the survey; hence, no convenience sample was used. Also, detailed information on the process of how the survey instrument was developed to its final stages has been reported, as well as the instrument's reliability coefficient.

Conducting a nationwide survey was the method used to increase the number of participants. However, the low response rate (6.46%) means caution should be taken in interpreting the data. The data offers an understanding of special educators' perception of their knowledge about substance abuse and related classroom pedagogical skills for intervening with students with disabilities who are abusing substances. Additionally, the results of this study extend the knowledge base of this area of limited research by

providing a glimpse of special education teachers' current perceptions of substance abuse and related classroom pedagogy.

Approximately 60% of special education teachers reported that their students abused substances. This result is similar to what was reported in the previous study (Fowler & Tisdale, 1992) where over 50% of the special educators reported that their students abused substances. While approximately 60% of special educators reported their students abused substances, the majority perceived only 16% of their students were abusing substances. Thus, special educators believe that while special education students abuse substances, this is only done by a relatively small percentage. This disparity may be attributed to the teachers' inability to accurately identify their students who are abusing substances, a finding noted in a previous study (Fowler & Tisdale, 1992) where when asked how many of their students were abusing substances, 78% of the teachers reported that none of their students were. Yet, 20% of the teachers were teaching special education students diagnosed with a substance abuse problem.

The most often selected response of the teachers' perception of knowledge in each substance abuse area was *some knowledge* and *a lot of knowledge*. However, out of the five response categories, the teachers' percentage of their level of knowledge in *some*, and *a lot of knowledge* response categories in the six areas (i.e., types of substances frequently abused by students, physical/visible signs of substance abuse, effects of substances on cognition, effects of substances on behavior, and instructional and behavioral strategies) was still below 50%, with less than 30% of the teachers reporting having a *great deal of knowledge* in these areas. This result is similar to the previous

studies (Fowler & Tisdale, 1992; Genaux et al., 1995) where special educators (47%) reported feeling *adequate*, and 26% reported feeling *very adequate* in their level of knowledge in various substance abuse areas. This implies that while many special educators perceive that they have moderate knowledge about substance abuse areas, the majority (70%) still interpret their knowledge as limited.

Out of the six areas (i.e., types of substances frequently abused by students, physical/visible signs of substance abuse, effects of substances on cognition, effects of substances on behavior, and instructional and behavioral strategies), the teachers reported having the least knowledge in classroom strategies to support the academic performance of special education students who are abusing substances: less than 12% reported having *a great deal* of knowledge, while 10% reported having no knowledge (*none*). This may not be surprising since teacher training programs do not typically provide coursework in substance abuse (Watson et al., 2003). It could be that the 78% of teachers who reported having some moderate knowledge may have obtained it from other sources, which may not be centralized. One may assume that teachers with more knowledge related to classroom pedagogy designed to assist special education students who are abusing substances may be in a better position to help these students academically.

The post-hoc results on teachers' perceptions of knowledge in the six substance areas (i.e., types of substances frequently abused by students, physical/visible signs of substance abuse, effects of substances on cognition, effects of substances on behavior, and instructional and behavioral strategies) imply that the teachers had more or higher knowledge in the two areas- effects of substances on behavior, and cognition- than in the

other four areas. Social learning theory (Ormrod, 1999) may account for this difference, in that the teachers could have acquired this knowledge from observing others, from their own experiences with substance use, and/or via media.

Across the school levels, high school special educators reported having the highest level of knowledge in most of the areas in *some* and *a lot of knowledge* response categories. However, in *a great deal* of knowledge response category, kindergarten special educators reported the highest level of knowledge in four out of the six areas: effects of substances on behavior, effects of substances on cognition, as well as instructional and behavioral strategies. Nonetheless, in the six areas (i.e., types of substances frequently abused by students, physical/visible signs of substance abuse, effects of substances on cognition, effects of substances on behavior, and instructional and behavioral strategies), there were no significant differences found in the teachers' level of knowledge across the school levels. This implies that overall, across school levels, there may be little or no difference in the teachers' level of knowledge in the six areas. Hence, in terms of educating these teacher groups, relatively similar level and degree of knowledge may need to be provided.

Across school locations, the highest percentage of special educators who reported having *some knowledge* in five out of six areas (i.e., types of substances frequently abused by students, physical/visible signs of substance abuse, effects of substances on behavior and cognition, and behavioral strategies) were rural teachers, while in the *a lot of knowledge* response category, suburban teachers reported the highest knowledge in five areas (i.e., types of substances frequently abused by students, effects of substances

on behavior and cognition, as well as instructional and behavioral strategies). The difference in the level of knowledge reported by urban and suburban teachers in *a great deal of knowledge* response category was minimal. Rural teachers reported the least level of knowledge in this response category.

While one may argue that the poor result from rural teachers may be explained by the fact that with funding inequalities over the years, many poor rural districts have hired a growing number of individuals who lack formal preparation for teaching, this is not the case since urban districts have done the same (Darling-Hammond, Holtzman, Gatlin, & Heilig, 2005). Moreover, special education teacher training programs do not typically provide substance abuse information to their students (Watson et al., 2003); hence, some of these educators could not have received this information from their programs. That leaves the likelihood that the other educators may be receiving the information from other sources, which were not determined by this study because this information was not requested on the survey.

Regardless, post-hoc results across school locations only showed a significant difference in one area (classroom instructional strategies) between urban and rural teachers, implying that in the other five substance abuse areas (i.e., types of substances frequently abused by students, physical/visible signs of substance abuse, effects of substances on behavior and cognition, and behavioral strategies) there may be little or no difference between these two groups of teachers. Further, no significant results were noted between suburban and rural teachers in the six areas, once again implying little or no difference in the level of knowledge between these groups of teachers. Hence, in

regards to educating these groups in the substance abuse areas, there may be a need to provide relatively similar breadth and depth of knowledge.

Across the three teacher disability assignment groups (i.e., teachers who teach students with LD, BD, or MR), less than 50% of special educators reported having knowledge in all the six areas (i.e., types of substances frequently abused by students, physical/visible signs of substance abuse, effects of substances on behavior and cognition, and instructional and behavioral strategies) across *some, a lot,* and *a great deal of knowledge* response categories. This finding is comparable to previous studies (Genaux et al., 1995; Prater & Serna, 1993) where less than 50% of special educators reported having *adequate* or *very adequate* level of knowledge in various substance abuse areas. Although still low, teachers who teach students with BD reported the highest percentage (17.8%-37.8%) in *a great deal of knowledge* response category in all six areas compared to their counterparts, and also reported the highest mean average in all the six areas.

Further, post hoc results across the teacher disability assignment groups also reported that teachers who teach students with BD had more knowledge than teachers who teach students with LD in five out of six areas: types of substances frequently abused by students, effects of substances on behavior and cognition, and instructional and behavioral strategies. However, teachers who teach students with MR reported more knowledge than teachers who teach students with BD in three areas: the effects of substances on behavior, instructional, and behavioral strategies to support the academic performance of special education students abusing substances. Generally, these results

imply that teachers who teach students with BD perceive that they have more knowledge than their counterparts in the area of substance abuse. It is possible that these teachers may have acquired some knowledge in this area while working with students given the tendency of substance use problem among students with BD (Rutherford, Quinn, & Mathur, 2004).

In general, the majority of special education teachers reported having moderate levels of knowledge in some areas of substance abuse, but noted having low levels especially in classroom strategies to assist special education students who are abusing substances. The teachers' perception, especially in the latter, may leave some feeling incompetent to academically assist special education students who are abusing substances.

Providing teachers with information on substance abuse and related classroom pedagogy, such as providing specific accommodations, may help them feel more equipped in this area, and in turn may help them to academically assist special education students who are abusing substances. Currently, there is no known research on instructional and/or behavioral strategies for helping students with disabilities that are abusing substances. Therefore, this might be an area that would need to be explored by educators, in consultation with other departments.

Special education teachers could be provided with information on substance abuse and related classroom strategies in their teacher training program. The special education department could team up with other departments (e.g., psychology and/or social work) to facilitate the process. Following graduation, this information could be disseminated to

the teachers through periodic professional development. In the long run, this information may be valuable for special education teachers since school counselors and school psychologists, who may be in a position to help these students, possess limited knowledge with regards to substance abuse and students with disabilities (Baker, 2000; Jones, 2007). Aside from feeling more prepared to address some behavioral and instructional problems related to substance abuse among their students, such knowledge may help special educators to be in a better position to identify their students with a substance abuse problem, and provide timely referrals.

Recommendations for Future Research

Future studies may verify the authenticity of the teachers' reports on their level of knowledge in the six substance abuse areas. This could be examined through several means: testing the teachers on this information, having the teachers complete a questionnaire to test the specifics of their knowledge, and/or conducting focus groups to verify the information they provide in a survey. Additional research may also investigate the avenues the teachers use to acquire substance abuse information, and determine the credibility of their sources. Meanwhile, surveying special education students may help to compare the teachers' reports in this study about substance abuse practices among students with disabilities.

The low percentages of the teachers' perception of knowledge in the areas of classroom strategies to support the academic performance of special education students, who are abusing substances, warrant research in this area. For these teachers, there is a high likelihood that they may encounter these students in their classrooms since they are

abusing substances (Demers, 2000; McMillen et al., 2002), and additional risk factors such as low self-esteem, unsuccessful school experiences, stigmatization, addiction to prescribed medications that may be addictive, chronic medical problems, social isolation, lack of socialization skills, co-existing behavioral problems, comorbid disability, disenfranchisement, and mental health issues further increase these students' likelihood to abuse substances at a higher rate than their non-disabled peers (McCombs, 2002; Stevens & Smith, 2005). Currently, research in this area is sparse. A multidisciplinary team composed of educators, psychologists, and substance abuse experts, could team up to begin this line of research. Additionally, continued research that examines the teachers' perceptions of their areas of need related to the above six areas of substance abuse and related classroom pedagogy would provide researchers some idea of where to prioritize their line of research.

Future researchers may also deploy the improved survey instrument (see suggestions in the *Limitations* section) to only states that have been identified to have a high rate of substance abuse intake among special education students. The results could serve as a fertile ground to pilot appropriate and feasible classroom instructional and behavioral interventions to support the academic performance of this student population. In the event that the results are found favorable, these interventions could be implemented, after necessary adjustments and adaptations are made, to other school districts across the nation.

In addition, researchers could reexamine the preparation programs to determine effective teacher education and professional development practices that inform special

educators of related best practices with this student population. Last, but not the least, future researchers who wish to replicate this study, may want to review the limitations discussed below in order to make the necessary adaptations. All of the above efforts may advance the research in this area, and in the process, may provide academic benefits for students with disabilities who are abusing substances.

Limitations

One of the limitations of this study, as with any survey research, was that the data accrued was self-reported, thereby impacting the credibility of responses. Further, the fact that substance abuse in schools is an area that is considered sensitive by many schools and professionals may have influenced teachers to provide biased responses.

While attempts were made to increase the overall response rate of this nationwide survey, this remained low (6.46%). The response rate was especially low from elementary respondents (n=2). Thus, the data collected may not be representative of the larger group of special education teachers across the nation. To increase the response rate one idea would be to provide incentives, such as Amazon gift cards, to the respondents. A higher response rate might subsequently increase the generalizability of the results.

However, it should be noted that increasing the response rate may not necessarily reduce nonresponse bias or produce vastly different study results (Groves, 2006; Keeter, Miller, Kohurt, Groves, & Presser, 2000); therefore, there is need to evaluate nonresponse bias by employing appropriate analyses. While nonresponse bias was evaluated in this study, weights were not applied before running the data as advised by

Kano et al. (2008), thus failing to equivocally establish whether the study findings were generalizable to the larger population of special education teachers.

Another limitation was that while efforts were made to ensure respondents did not proceed to subsequent questions, without first responding to preceding questions, this still happened. Having multiple trials where the researcher tests and completes the online survey may alleviate this problem.

Additionally, the design of the demographic section of the survey instrument limited the extent of data analysis in some cases. The instrument could be improved by adding *other* response option to the question, "do you have a special education certification?" Also, on the question that asks for participants' highest degree of special education, it may help to add a response option such as *some form of special education certificate* or *other* to allow for respondents who do not fit in any of the stringent response options. Many respondents also served multiple school levels such as kindergarten-12th grade, or middle/high school, to mention a few. Hence, the survey instrument may want to further broaden, and/or break down school level option categories. Another alternative may be to add *other* response category, which would also ask respondents to briefly explain their school level. These improvements on the survey instrument may provide a clearer picture of the teachers' perceptions of knowledge.

Appendices

Appendix A: Synthesized Studies

Author/ Year	*Type of study/Measurement type*	*Setting/ Participants*	*Sample type*	*Reliability reported/ Measurement tool pre-tested (PRT) pilot tested (PT)*
Fowler, R. E. & Tisdale, P. C. (1992).	-Quantitative -Self-made questionnaire -66.4% return rate	166 SPED teachers *School level taught -Elem-39.2% -Middle-28.9%; -High-30.1%; -Middle/high school-01.8% Exceptionality taught (ET) LD- 39% EMH-21% BD/EH- 10% TMH-11% Multiple-19%	Selective	NR PT- Sample questions sent to sample of 20 teachers from 3 county areas- 16 returned & several items rephrased
Prater, M. A. & Serna, L. A. (1993).	-Quantitative - Self-designed survey (100% return rate) *Likert-type scale 1-5 (strongly disagree to strongly disagree) 1-SD, 2-D; 3-N; 4-A; 5-SA *Likert also used neutral responses: not prepared-little prepared (20%) -prepared to very prepared (45%) *NB-choices given on responsibility SA: parents/family 58%; school personnel-36%; community/regular ed/schnurse-2% each	50 special education teachers School level -Elem-54% -Sec- 34% -Both levels- 12%	Selective-all volunteered	NR No PRT/PT

Appendix A (cont.)

Genaux, M., Morgan, D. P. & Friedman, S. G. (1995).	Quantitative -Survey- self-designed -Likert-type -74% return rate -Different scale depending on type of question e.g. inadequate-very adequate; low-high etc.	109 teachers of students with BD <u>School level</u> -Elem- 47.6% -Junior- 23.3% -Senior- 29.1% NR- 6% <u>Class type</u> -Resource- 33.9% -Self-contained- 45% -Special sch-21.2%	Random selection of sub-sample of 866 BD teachers in CCBD list -Sample proportionately stratified across 50 states & territories, including urban, suburban & rural areas	NR PRT- 3 classroom teachers; 3 univ. professors evaluated the questionnaire for wording & content
Leigh, J. E., Huntze, S. L. & Lamorey, S. (1995)	Mixed method -Self-designed <u>survey: scale</u> 1-did not address 2-very limited extent 3-to some extent 4-address openly & completely *(over 50% return rate) -narrative response (31%)	407 special education teachers <u>School level</u> -Elem-49% -Sec-43% -Both- 8% <u>Class type</u> -Resource-57% -Self-contained-42% -Gen ed.-1% <u>ET</u> LD- 151 MR- 142 BD- 114	-SPED director identified one LD, BD & MR teacher -Randomly selected the teachers identified from each district (270 randomly selected districts)	PRT FT- Efforts made to create 45 items (item pool reviewed by 30 grad/undergrad students from 4 univ. courses *Half were certified teachers with prior or SPED teaching positions -Selected items based on consensus among majority of the reviewers that it was appropriate
Lamorey, S. & Leigh, J. E. (1996)	Qualitative 30% response rate	120 special educators <u>School level</u> -Elem-54% -Sec.- 41% -Both-5% <u>Class type</u> -Resource- 59% -Self-contained- 39% -Fulltime gen. ed-2%	-Sample represented larger group (Leigh et al. 95) in demographic & extent of coverage of topics -Mean of subgroups calculated for each item & found similar to means obtained in original study	NR PRT- Refer to Leigh et al. 1995

Appendix A (cont.)

Lamorey, S. & Leigh, J. E. (1999)	Mixed method -Survey (102 surveys analyzed- overall 25% response rate) *rating used same as Leigh et al. 1995 *19 most high risk categories chosen for comparisons (reported 5 most discussed & 5 least discussed) *ratings 3 & 4 combined to determine an indicator of the extent to which each contemporary issue was addressed by the various groups of educators	102 urban and rural SPED teachers= 80 <u>School level</u> -All high school <u>ET</u> -LD- 39 -MR- 20 -BD-10 -Cross-categorical- 11 -Regular students- 22	Leigh et al. 1995 sample- analyzed data returned	NR PRT- Refer to Leigh et al. 1995
Repie, M. S. (2005)	Quantitative -Survey (41.3 % return rate). -Standardized School Mental Health Issues Survey modified	1000 (n=250 each) of regular teachers, special educators, school counselors and school psychologists <u>Out of 413</u> <u>sub-sample</u> -SPED-28.3% (2nd highest)	Random national sample	Internal reliability co-efficient .84-.95 PT-Initially piloted to 46 grad students in university -Modified initial tool based on piloted implications and statistics

Note: NR- not reported; PRT- instrument pre-tested; PT- instrument pilot tested; SA- substance abuse; SPED- special education

Appendix B: Tabulation of Findings of Synthesized Studies

Author/ Year	*Overall purpose/ study focus*	*Item questions*	*Findings*
Fowler, R. E. & Tisdale, P. C. (1992).	-Teachers' perceptions of alcohol & SA education for SPED students	*How many students have been identified as having a SA problem? *Are your students regularly involved in alcohol & SA ed. programs at school? *Are special alcohol and substance abuse ed. programs regularly provided for your students? *Do you feel there are adequate resources within your school to assist SPED students who have, or who are at high risk for substance abuse problems?	*Teachers perceived existence of students taking substances -Believed some of their students were at high risk for SA problems and/or at high risk for abusing -However, they failed to accurately identify those already diagnosed with SA among students *Students not regularly/ or not at all involved in substance abuse programs or receiving the services -Perceived inadequate substance abuse programs for the students
Prater, M. A. & Serna, L. A. (1993).	-Teachers' perceptions of mandated curriculum - Teachers' perceptions on preparedness in teaching and level of comfort doing so -Teachers' perceptions of placement of responsibility for providing instruction on SA and other topics	*Should a formal SA prevention curriculum, as well as for other topics, be mandated for elementary, middle, and high schools? * How prepared do you feel to teach the information? * Who should have the primary responsibility for teaching substance abuse, sex education, HIV/AIDS, and sexual abuse?	*Teachers strongly perceived there should be a mandated curriculum for SA besides the other 3 subjects *Secondary school teachers perceived a greater need for SA information for students than elementary teachers *Concerning SA issues, only 45% of teachers indicated feeling more prepared to teach * Teachers felt that SA was primarily the responsibility of parents, family members, and school personnel trained in this area -NB: Desegregated some information by school level

Appendix B (cont.)

Genaux, M., Morgan, D. P., & Friedman, S. G. (1995).	Perceptions of current practice of BD teachers in SA prevention programming	*Rate your current level of knowledge about SA & prevention in several areas [types of drugs, prevalence of SA, effects of SA, prevention strategies, treatment programs] (inadequate, adequate, very adequate) *Indicate your need for additional information on above areas (low, medium, high) *How often do you think your students use substances (never, once a yr, a month, a wk, a day) *How often do you think SA should be taught in your class (never-once a day) & indicate level of priority (low priority- high priority) *How often do you teach SA prevention in your classroom (never- once a day) *During an average school year, how often are your students exposed to school-wide substance abuse prevention activities (never-once a day) *Indicate factors that impede implementation of SA prevention education in your school program (not reported if a list was provided)	*Generally teachers felt inadequate in the knowledge of issues related to SA *Teachers indicated the need for additional knowledge in substance abuse areas (highest being prevention strategies, treatment programs & effects of substance abuse) *Secondary school teachers and teachers in special schools reported more use of SA *Secondary teachers felt the need for students to be presented SA information than elementary teachers -Teachers in self-contained classrooms cited this information as a critical need compared to teachers from other class types *Teachers addressed SA issues to a limited extent - Special schools addressed SA issues the most, and resource classrooms the least -Secondary school teachers addressed SA issues the most -Highest frequency (<35%) of addressing the SA topic was once a month *Generally teachers reported scarce SA abuse prevention activities across all school levels: ~21% -Only ~ 54% reported students being exposed to SA prevention programs once a year

			-In some cases students never received the services *Challenges faced by teachers in addressing SA: inadequate class time, inadequate funding, no curriculum materials, lack of parental support, substance abuse not a priority, lack of admin. support, insufficient training/knowledge -Desegregated info. by school level, class type, & teacher exceptionality taught
Leigh, J. E., Huntze, S. L. & Lamorey, S. (1995)	Extent of SPED teachers' coverage of 45 topical issues with LD students	Provided sub-purposes *To explore extent to which teachers address identified issues with LD students *To investigate whether topical issues are addressed to varying degrees with different SPED students *To examine whether differences exist in the extent to which elem. & sec. SPED students receive SA infor. from their SPED teachers <u>One open-ended question item</u> *- Express opinions/comments regarding the importance/appropriateness of addressing topics issues with a SPED students	Regarding SA issues: *SA topic was addressed to a limited extent -Generally tobacco use taught more than alcohol abuse and drug use *BD teachers addressed SA issues more -Self-contained classrooms addressed the issues more than resource room teachers *Secondary school teachers taught SA issues more *Topics (including SA) taught sporadically *Barriers that impeded more coverage of topics: insufficient time, students' lack of cognitive ability, students' emotional immaturity, assumption topics are dealt with in regular classrooms, community values that discourage discussion of controversial/sensitive issues

Appendix B (cont.)

Lamorey, S. & Leigh, J. E. (1996)	Teachers perceptions of addressing topical issues	Qualitative research question item *Seek teachers' opinion about importance/ appropriateness of addressing contemporary issues (tobacco use, drug use, substance abuse etc.)	*Consensus that special education students need more information -Teachers were concerned about the lack of this information among students *Teachers felt it was heavily the school's responsibility to cover SA issues -NB: Desegregated some info by school level, class type, teacher exceptionality taught
Lamorey, S. & Leigh, J. E. (1999)	Rural/urban Arizona SPED teachers' practice of addressing contemporary issues (included substance abuse)	*To examine the extent to which teachers address contemporary issues (included substance abuse). <u>One open-ended question</u> * Teachers to comment on their roles, responsibilities, and perceptions of need in addressing contemporary issues	Regarding substance abuse issues: *Topic was addressed much less by rural and urban SPED teachers—the latter addressed it the least -Teachers of BD students addressed the issue slightly more than teachers of MR and LD students. The latter addressed it the least. -Issues related to tobacco use were addressed more than drug use and alcohol abuse *Teachers cited barriers that impeded more address of these topics: lack of time, lack of materials, community standards/officials, parental resistance, students' cognitive ability -NB: Desegregated some info by teacher exceptionality taught

Appendix B (cont.)

Repie, M. S. (2005)	Perceptions of school personnel about mental health issues e.g., provision of MH services in school	*To assess teachers' perceptions of the need for SA information for their students *To determine teachers' views on the quality of mental health services provided for their students	*Regular and special educators expressed great need for their students to have SA information and services -Secondary teachers felt SA services were the most critical need *One of the most infrequently offered services was SA - Special educators, besides regular teachers felt substance abuse services as least effective - Special educators, besides regular teachers felt students were not given the much-needed attention in SA issues -Special educators felt mental health services were ineffective for their students NB: Desegregated some info by teacher exceptionality taught

Note: SA- substance abuse; SPED- special education

Appendix C: Critical Appraisal of Synthesized Studies

Author	*Sample size/ Response rate*	*Teacher school level*	*Class type*	*Exceptionality taught*	*Sample*	*Reliability*	*Pre-tested (PRT)/post-tested (PT)*
Fowler, R. E. & Tisdale, P. C. (1992).	N= 166 66.4%	✓	NR	✓	Selective	NR	PT
Prater, M. A. & Serna, L. A. (1993).	N= 50 100%	✓	NR	NR	Selective	NR	NR
Genaux, M., Morgan, D. P. & Friedman, S. G. (1995).	N= 109 74%	✓	✓	✓	Random selection	NR	PRT
Leigh, J. E., Huntze, S. L. & Lamorey, S. (1995)	N=407 Over 50% Qual.-31%	✓	✓	✓	Random selection	NR	PRT
Lamorey, S. & Leigh, J. E. (1996)	N=120 30%	✓	✓	NR	Leigh et al. (1995) sample	NR	PRT (from Leigh et al. 1995)
Lamorey, S. & Leigh, J. E. (1999)	Total N= 102 (SPED teachers n=80) 25% Qual.- NR	✓	NR	✓	Leigh et al. (1995) sample	NR	PRT (from Leigh et al. 1995)
Repie, M. S. (2005)	Total N= 1000 SPED n=250 41.3%	NR	NR	NR	Random selection	.84-.95	PT

Note: *NR= not reported*

Appendix D: Consent Form

You are invited to participate in a survey, entitled *"Special Education Teachers' Survey on Issues Related to Substance Abuse."* The study is being conducted by Mary W. Ndande, M.A., Department of Special Education at The University of Texas at Austin, 1 University Station D5300 Austin, TX 78712, 512-475-7279.

The purpose of this study is to examine special educators' perceptions of knowledge and classroom competence on matters related to student substance abuse. The data you provide will serve to inform future instruction for special educators on knowledge needed about substance abuse, as well as help seek ways to address your classroom needs in this area. I estimate that it **will take about 10-minutes of your time** to complete the survey.

Risks to responders are considered minimal. There will be no costs for participating. Identification numbers associated with email addresses will be kept during the data collection phase for tracking purposes only.

Your participation in this survey is voluntary. You have the right to withdraw from participation (by closing the window) at any time without penalty. If you have any questions, please contact the investigator listed above. If you are dissatisfied at any time with any aspect of this study you may contact, anonymously, if you wish the Institutional Review Board by phone at (512) 471-8871 or email at orsc@uts.cc.utexas.edu.

This study has been reviewed and approved by The University of Texas at Austin Institutional Review Board: IRB Approval Number: 2009-02-0080

Please click on the link below to complete the survey:

http://www.surveymonkey.com/s/DVFQK35

Thank you for your time!

Appendix E: Final Follow-Up Email

Dear Special Education Teacher,

This is a (final) reminder regarding a doctoral research study to examine special educators' perceptions of knowledge and classroom competence on matters related to student substance abuse.

This study has been reviewed and approved by The University of Texas at Austin Institutional Review Board: IRB Approval Number: 2009-02-0080, **and will take approximately 10 minutes to complete.**

Your responses are very valuable to this study and greatly appreciated, thus you are encouraged, but not required, to complete this survey. By completing the survey, you are indicating consent to participate in this study.
Should you have any additional questions about this study as well as your rights, please refer to the consent form:
https://webspace.utexas.edu/xythoswfs/webui/_xy-39631887_docstore1-t_ZlgcwJwA

You can access the survey by clicking on the following link:
http://www.surveymonkey.com/s/DVFQK35

I realize the busy schedule you as a special education teacher has, and I am truly grateful for your time and assistance in this study.

With Much Appreciation,
Mary Ndande, Doctoral Candidate
Department of Special Education, The University of Texas at Austin

Appendix F: Survey Instrument

Special Education Teachers' Survey on Issues Related to Substance Abuse

In this survey, substance abuse is defined as alcohol use/abuse, taking of illegal substances, abusing prescription drugs and/or abusing over-the-counter drugs.

1. Do you think any of the special education students you instruct abuse substances?
❒ Yes ❒ No

If YES, continue with the next item.
If NO, skip to item 3.

2. If YES on no. 1 what **percentage** of your special education students do you think abuse substances?
❒ None ❒ Below 16% ❒ 17% -33% ❒ 34%-50% ❒ Over 50%

3. How important do you think it is for special education teachers to be **knowledgeable** about substance abuse?
❒ very important ❒ somewhat important ❒ not very important
❒ not at all important ❒ don't know

4. Rate your **current level of knowledge** of substance abuse in the following areas:

a. *Types of substances frequently abused by students:*

0	1	2	3	4
None		Some		A great deal

b*. Physical/visible signs of substance abuse*

0	1	2	3	4
None		Some		A great deal

c*. Effects of substance abuse on behavior*

0	1	2	3	4
None		Some		A great deal

d*. Effects of substance abuse on cognition*

0	1	2	3	4
None		Some		A great deal

Appendix F (cont.)

5. How important do you think it is for special education teachers to be **knowledgeable** about classroom instructional strategies and behavioral management skills to support the academic performance of special education students abusing substances?

❒ very important ❒ somewhat important ❒ not very important
❒ not at all important ❒ don't know

6. Rate your **current level of classroom knowledge** in effectively implementing the following:

a. *Classroom instructional strategies to support the academic performance of special education students who are abusing substances*

0	1	2	3	4
None		Some		A great deal

b. *Classroom behavioral strategies to support the academic performance of special education students who are abusing substances*

0	1	2	3	4
None		Some		A great deal

7. Optional Item.

Briefly (in one to five sentences) **indicate your reason/s** why you think it is important **OR** not important for special education teachers to be knowledgeable about substance abuse areas, instructional strategies, as well as behavioral management skills to support the academic performance of special education students who are abusing substances.

8. To what extent to did your **teacher preparation coursework** provide you with information about the following substance abuse areas:

a. *Types of substances frequently abused by students:*

0	1	2	3	4
None		Some		A great deal

b. *Physical/visible signs of substance abuse*

0	1	2	3	4
None		Some		A great deal

c. *Effects of substance abuse on behavior*

0	1	2	3	4
None		Some		A great deal

d. *Effects of substance abuse on cognition*

0	1	2	3	4
None		Some		A great deal

e. *Classroom instructional strategies to support the academic performance of special education students who are abusing substances*

0	1	2	3	4
None		Some		A great deal

f. *Classroom behavioral strategies to support the academic performance of special education students who are abusing substances*

0	1	2	3	4
None		Some		A great deal

9. How important is it for **you to receive** information in the following areas:

a. *Types of substances frequently abused by students:*

0	1	2	3	4
Not at all important				Extremely important

b. *Physical/visible signs of substance abuse*

0	1	2	3	4
Not at all important				Extremely important

c. *Effects of substance abuse on behavior*

0	1	2	3	4
Not at all important				Extremely important

d. *Effects of substance abuse on cognition*

0	1	2	3	4
Not at all important				Extremely important

e. *Classroom instructional strategies to support the academic performance of special education students who are abusing substances*

0	1	2	3	4
Not at all important				Extremely important

f. *Classroom behavioral strategies to support the academic performance of special education students who are abusing substances*

0	1	2	3	4
Not at all important				Extremely important

Appendix F (cont.)

Demographic Information
We would now like to gather some personal information about you. Remember, all of your answers are confidential.

10. In which state do you teach? _____

11. Which setting best describes the location of your **principal** teaching assignment?
❒ Urban ❒ Suburban ❒ Rural

12. Please indicate the best description of your **current** teaching assignment
❒ Part-time ❒ Full-time ❒ Other

13. Please indicate your **principal** teaching assignment
❒ Kindergarten only
❒ Elementary
❒ Middle school/ junior high
❒ High school
❒ Other: please specify ----------

14. Your **principal** teaching assignment is with students identified in what **primary** disability category? (**Mark only one**)

❒ Learning disabilities
❒ Behavioral disorders
❒ Emotional & behavioral disorders
❒ Mental retardation (please specify):
❒ mild ❒ moderate ❒ severe
❒ Autism
❒ Multiple disabilities
❒ Orthopedic Impairments
❒Traumatic Brain Injury
❒ Hearing Impairments
❒ Speech or Language Impairments
❒ Visual Impairments
❒ Deaf-Blindness
❒ Other Health Impaired

15. How many years experience do you have as a special educator?
❒0-2
❒3-5
❒6-9
❒10-15
❒16-20
❒Above 21

Appendix F (cont.)

16. Do you have a special education certification?

❒ Yes *(Go to question 17)* ❒ No *(Go to question 18)*

17. What is your **highest** degree in special education?

❒ BS/BA ❒ Masters ❒ PhD/EdD

18. What is your gender?

❒ Male ❒ Female

19. Which age bracket do you fall under?

❒ 20-30
❒ 31-40
❒ 41-50
❒ 51-60
❒ Above 61

20. What is your race/ethnicity?

❒ American Indian or Alaska Native
❒ Asian or Pacific Islander
❒ Black or African American
❒ Hispanic
❒ White
❒ Other: please specify ----------

** Please click the "submit" button to forward your responses. Thank you!

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